Access DB# 92279

SEARCH REQUEST FORM

Scientific and Technical Information Center

Requester's Full Name: Carol Chaney Examiner #: 72248 Date: 4-24-03
Art Unit: 1745 Phone Number 30 5 3777 Serial Number: 09/855 838
Mail Box and Bldg/Room Location: CP3 8D03 Results Format Preferred (circle): PAPER DISK E-MAIL

If mor than one search is submitted, please prioritize searches in order of need:

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Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc, if known. Please attach a copy of the cover sheet, pertinent claims, and abstract.

Title of Invention: Polymer Gel Electrolyte & Lithium Battery...

Inventors (please provide full names): Hyung-Gon Noh

Earliest Priority Filing Date: 6-22-2000

For Sequence Searches Only *Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.*

Polymer gel electrolyte with: a terpolymer containing the following 3 moieties:

① $-(CH_2CH_2O)-$

② $-(CH_2CHO)-$ with side chain $CH_2O(CH_2CH_2O)_nR$ R is alkyl w 1-12 C's

③ $-(CH_2CHO-$ with side chain $CH_2OCH_2CH=CH_2$

: a lithium salt ie $LiBF_4$, $LiClO_4$, $LiCF_3SO_3$

: an organic solvent for the Li salt

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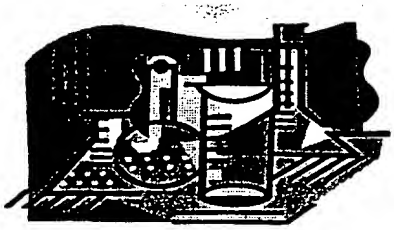
STAFF USE ONLY	Type of Search		Vendors and cost where applicable	
Searcher: Kosma RM	NA Sequence (#)		STN	
Searcher Phone #: 305-3542	AA Sequence (#)		Dialog	
Searcher Location: EIC 1700	Structure (#)	✓	Questel/Orbit	
Date Searcher Picked Up: 4/22/03	Bibliographic		Dr.Link	
Date Completed: 4/22/03	Litigation		Lexis/Nexis	
Searcher Prep & Review Time: 30 min	Fulltext		Sequence Systems	
Clerical Prep Time:	Patent Family		WWW/Internet	
Online Time: 24 min	Other		Other (specify)	

PTO-1590 (8-01)



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Scientific and Technical Information Center

Search Results Feedback Form

The search results generated for your recent request are attached. If you have any questions or comments (compliments or complaints) about the scope or the results of the search, please contact the searcher whose name is circled below.

Kathleen Fuller 308-4290 John Calve 308-4139

Barba Koroma 305-3542 Eric Linnell 308-4143

All searchers are located in the library in CP3/4 3D62

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Experimental and calculated property data are now available.  See HELP
PROPERTIES for more information.  See STNote 27, Searching Properties
in the CAS Registry File, for complete details:
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FILE LAST UPDATED: 28 Apr 2003  (20030428/ED)

  This file contains CAS Registry Numbers for easy and accurate
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L17             STR
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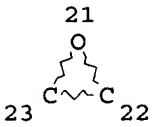
KOROMA EIC1700



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DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
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NUMBER OF NODES IS 3

STEREO ATTRIBUTES: NONE
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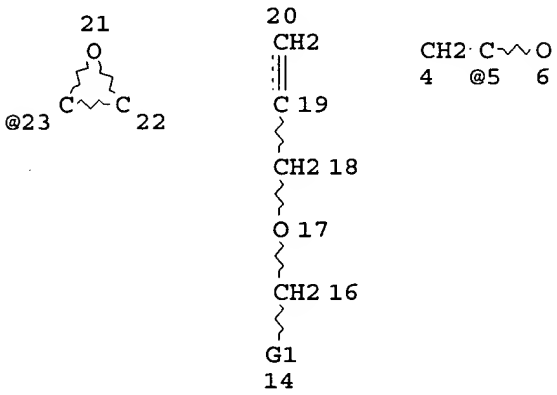

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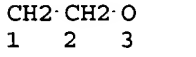

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DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED

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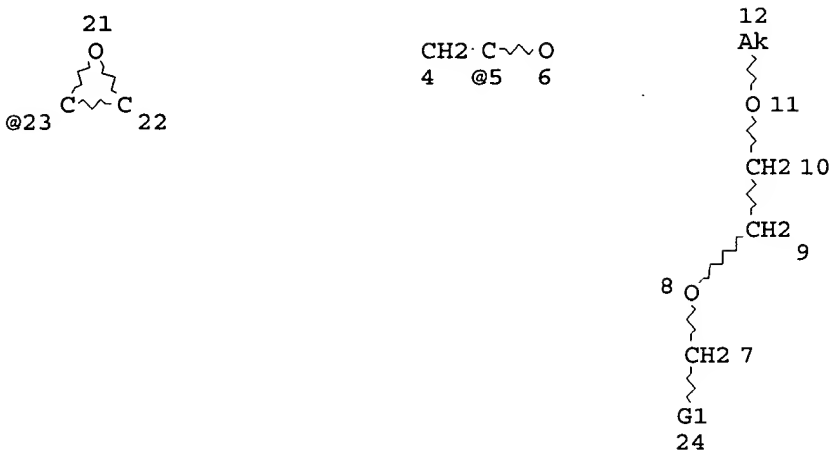
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS 3

STEREO ATTRIBUTES: NONE
L40 STR



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NUMBER OF NODES IS 13

STEREO ATTRIBUTES: NONE
L42 SCR 2043
L44 169 SEA FILE=REGISTRY SSS FUL (L26 OR L17) AND L22 AND L40 AND L42
L47 82 SEA FILE=CAPLUS ABB=ON PLU=ON L44
L48 34 SEA FILE=CAPLUS ABB=ON PLU=ON L47 AND (LI OR LITHIUM)

=> d ibib abs hitstr ind total l48

L48 ANSWER 1 OF 34 CAPLUS COPYRIGHT 2003 ACS
ACCESSION NUMBER: 2003:262136 CAPLUS
DOCUMENT NUMBER: 138:274121
TITLE: Device using polymer gel electrolyte
INVENTOR(S): Nakamura, Seiji; Tabuchi, Masato; Sakai, Takaaki; Miura, Katsuhito; Murakami, Satoshi
PATENT ASSIGNEE(S): Daiso Co., Ltd., Japan
SOURCE: PCT Int. Appl., 29 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2003028144	A1	20030403	WO 2002-JP9699	20020920
W: DE, US				

PRIORITY APPLN. INFO.: JP 2001-288844 A 20010921

AB The device, esp. a secondary **lithium** battery contains an gel electrolyte obtained by reacting a pre-gel compn., having viscosity at 25.degree. .ltoreq.100 mPa and comprising (A) a polyether copolymer which has a wt. av. mol. wt. of 50,000-1,000,000 and is prepd. by polymg. .gtoreq.1 oxirane compd. having a main chain derived from ethylene oxide and/or propylene oxide and a side chain of oligo-oxyethylene, and an optional oxirane compd. having a reactive functional group, (B) a crosslinker, (C) an electrolyte salt compd., (D) an aprotic org. solvent, and (E) an initiator; where the device manufd. by injecting the pre-gel compn. into the device having a cathode facing an anode, and gelatinizing the compn. by crosslinking reaction, comprises 0.5-10 % gel held between the cathode and the anode.

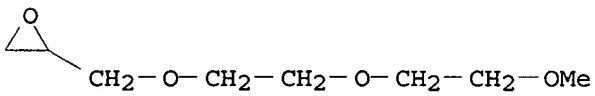
IT **115383-11-4**, Allyl glycidyl ether-ethylene oxide-2-(2-methoxy ethoxy)ethyl glycidyl ether copolymer
RL: DEV (Device component use); USES (Uses)
(compns. of crosslinked ether copolymers for electrolytes in secondary **lithium** batteries)

RN 115383-11-4 CAPLUS

CN Oxirane, [[2-(2-methoxyethoxy)ethoxy]methyl]-, polymer with oxirane and [(2-propenyloxy)methyl]oxirane (9CI) (CA INDEX NAME)

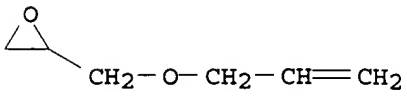
CM 1

CRN 71712-93-1
CMF C8 H16 O4



CM 2

CRN 106-92-3
CMF C6 H10 O2



CM 3

CRN 75-21-8
CMF C2 H4 O

IC ICM H01M010-40
ICS H01M014-00; H01G009-00; H01B001-06; H01L031-04; G01N027-406; C08G065-04
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
ST secondary **lithium** battery polyether polymer gel electrolyte compn
IT Battery electrolytes
(compns. of crosslinked ether copolymers for electrolytes in secondary **lithium** batteries)
IT Polyethers, uses
RL: DEV (Device component use); USES (Uses)
(compns. of crosslinked ether copolymers for electrolytes in secondary **lithium** batteries)
IT Secondary batteries
(**lithium**; compns. of crosslinked ether copolymers for electrolytes in secondary **lithium** batteries)
IT 7439-93-2, **Lithium**, uses
RL: DEV (Device component use); USES (Uses)
(anode; compns. of crosslinked ether copolymers for electrolytes in secondary **lithium** batteries)
IT 12190-79-3, Cobalt **lithium** oxide (CoLiO2)
RL: DEV (Device component use); USES (Uses)
(cathode; compns. of crosslinked ether copolymers for electrolytes in secondary **lithium** batteries)
IT 3006-82-4, Perbutyl O 3006-93-7, N,N'-m-Phenylene bismaleimide 3290-92-4, Trimethylolpropanetrimethacrylate
RL: CAT (Catalyst use); USES (Uses)
(compns. of crosslinked ether copolymers for electrolytes in secondary **lithium** batteries)
IT 96-49-1, Ethylene carbonate 105-58-8, Diethyl carbonate 616-38-6, Dimethyl carbonate 14283-07-9, **Lithium** tetrafluoroborate 90076-65-6 **115383-11-4**, Allyl glycidyl ether-ethylene oxide-2-(2-methoxy ethoxy)ethyl glycidyl ether copolymer 483965-65-7
RL: DEV (Device component use); USES (Uses)
(compns. of crosslinked ether copolymers for electrolytes in secondary **lithium** batteries)
REFERENCE COUNT: 16 THERE ARE 16 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L48 ANSWER 2 OF 34 CAPLUS COPYRIGHT 2003 ACS
ACCESSION NUMBER: 2003:257990 CAPLUS
DOCUMENT NUMBER: 138:272662

TITLE: Porous membranes with improved adhesion and mechanical strength and manufacture of polymer gel electrolytes
INVENTOR(S): Fujita, Shigeru; Kii, Keisuke; Uetani, Yoshihiro; Nakamura, Seiji; Tabuchi, Masato
PATENT ASSIGNEE(S): Nitto Denko Corp., Japan; Daiso Co., Ltd.
SOURCE: Jpn. Kokai Tokkyo Koho, 18 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2003096232	A2	20030403	JP 2001-293283	20010926

PRIORITY APPLN. INFO.: JP 2001-293283 20010926

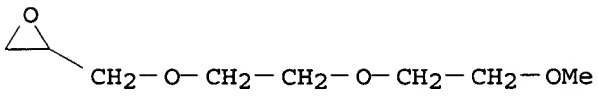
AB The membranes, useful for battery electrolytes, showing 180.degree. peeling strength .gtoreq.0.2 N/20-mm, comprise crosslinked polymers contg. poly(meth)acrylates, polyoxyethylene, polyoxypropylene, polyoxyethylene-polyoxypropylene, polyphosphazenes, polyvinyl ethers, and/or polysiloxanes in the main chains and linear oligoalkylene oxides in the side chains supported on porous membrane substrates. Thus, 2:20:80 mol allyl glycidyl ether-diethylene glycol Me glycidyl ether-ethylene oxide copolymer was mixed with Blemmer PDE 100 (diethylene glycol dimethacrylate), applied on a ultrahigh-mol.-wt. polyethylene porous membrane substrate, and heated to give a crosslinked membrane with 180.degree. peeling strength 2 N/20-mm, which was immersed in a 1:2 vol ethylene carbonate and Et Me carbonate soln. of **lithium** perchlorate to give a polymer gel electrolyte with ionic cond. at 25.degree. 6.0 .times. 10-4 S/cm.

IT **115383-11-4P**, Allyl glycidyl ether-diethylene glycol methyl glycidyl ether-ethylene oxide copolymer
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)
(llyl glycidyl ether-diethylene glycol Me glycidyl ether-ethylene oxide copolymer; porous membranes with improved adhesion and mech. strength for manuf. of polymer gel electrolytes)

RN 115383-11-4 CAPLUS
CN Oxirane, [[2-(2-methoxyethoxy)ethoxy]methyl]-, polymer with oxirane and [(2-propenyloxy)methyl]oxirane (9CI) (CA INDEX NAME)

CM 1

CRN 71712-93-1
CMF C8 H16 O4



KOROMA EIC1700

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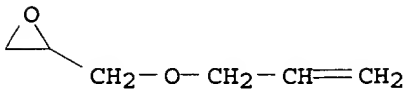
CRN 106-92-3
CMF C6 H10 O2



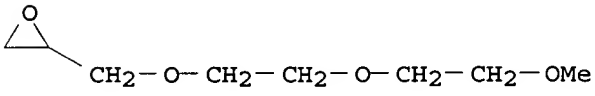
CM 3

CRN 75-21-8
CMF C2 H4 O

IT **454171-46-1DP**, Allyl glycidyl ether-diethylene glycol glycidyl methyl ether-ethylene oxide-Blemmer PDE 100 copolymer, **lithium** complexes
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(porous membranes with improved adhesion and mech. strength for manuf. of polymer gel electrolytes)
RN 454171-46-1 CAPLUS
CN 2-Propenoic acid, 2-methyl-, oxydi-2,1-ethanediyl ester, polymer with [[2-(2-methoxyethoxy)ethoxy]methyl]oxirane, oxirane and [(2-propenyloxy)methyl]oxirane (9CI) (CA INDEX NAME)

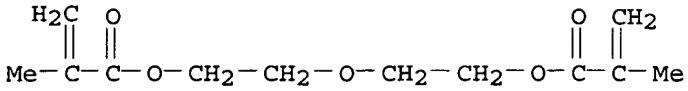
CM 1

CRN 71712-93-1
CMF C8 H16 O4



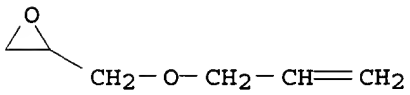
CM 2

CRN 2358-84-1
CMF C12 H18 O5



CM 3

CRN 106-92-3
CMF C6 H10 O2



CM 4

CRN 75-21-8
CMF C2 H4 O

IC ICM C08J009-36
ICS C09J129-10; C09J133-08; C09J133-10; C09J171-02; C09J183-04; C09J185-02; H01B001-06; H01G009-02; H01G009-035; H01G009-038; H01M010-40; C08L023-04

CC 38-3 (Plastics Fabrication and Uses)
Section cross-reference(s): 52

ST battery electrolyte ion conductive porous polyoxyalkylene membrane; allyl glycidyl ethylene glycol methyl oxirane methacrylate; **lithium** perchlorate polyphosphazene polysiloxane membrane polyoxyalkylene acrylic

IT Polyoxyalkylenes, uses
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(acrylic, crosslinked; porous membranes with improved adhesion and mech. strength for manuf. of polymer gel electrolytes)

IT Porous materials
(films; porous membranes with improved adhesion and mech. strength for manuf. of polymer gel electrolytes)

IT Battery electrolytes
Polymer electrolytes
(porous membranes with improved adhesion and mech. strength for manuf. of polymer gel electrolytes)

IT Acrylic polymers, uses
Polyoxyalkylenes, uses

Polyphosphazenes
Polysiloxanes, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(porous membranes with improved adhesion and mech. strength for manuf. of polymer gel electrolytes)

IT Fluoropolymers, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(porous substrate; porous membranes with improved adhesion and mech. strength for manuf. of polymer gel electrolytes)

IT Films
(porous; porous membranes with improved adhesion and mech. strength for manuf. of polymer gel electrolytes)

IT Polymerization catalysts
(ring-opening; porous membranes with improved adhesion and mech. strength for manuf. of polymer gel electrolytes)

IT 9002-88-4, Polyethylene
RL: TEM (Technical or engineered material use); USES (Uses)
(UHMWPE, porous membrane substrate; porous membranes with improved adhesion and mech. strength for manuf. of polymer gel electrolytes)

IT **115383-11-4P**, Allyl glycidyl ether-diethylene glycol methyl glycidyl ether-ethylene oxide copolymer
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)
(llyl glycidyl ether-diethylene glycol Me glycidyl ether-ethylene oxide copolymer; porous membranes with improved adhesion and mech. strength for manuf. of polymer gel electrolytes)

IT 126-73-8, Tributyl phosphate, uses 1461-22-9, Tributyltin chloride
RL: CAT (Catalyst use); USES (Uses)
(porous membranes with improved adhesion and mech. strength for manuf. of polymer gel electrolytes)

IT 7439-93-2DP, **Lithium**, polyoxyalkylene complexes
454171-46-1DP, Allyl glycidyl ether-diethylene glycol glycidyl methyl ether-ethylene oxide-Blemmer PDE 100 copolymer, **lithium** complexes
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(porous membranes with improved adhesion and mech. strength for manuf. of polymer gel electrolytes)

IT 9002-84-0, PTFE
RL: TEM (Technical or engineered material use); USES (Uses)
(porous substrate; porous membranes with improved adhesion and mech. strength for manuf. of polymer gel electrolytes)

L48 ANSWER 3 OF 34 CAPLUS COPYRIGHT 2003 ACS
ACCESSION NUMBER: 2003:40437 CAPLUS
DOCUMENT NUMBER: 138:109577
TITLE: Solid secondary **lithium** battery
INVENTOR(S): Ogata, Naoya; Sata, Tsutomu
PATENT ASSIGNEE(S): Torekion K. K., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 5 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent

LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2003017121	A2	20030117	JP 2001-200782	20010702

PRIORITY APPLN. INFO.: JP 2001-200782 20010702

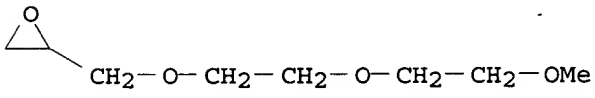
AB The battery has a **Li** or **Li**-intercalating anode, a **Li**-intercalating cathode, and a solid electrolyte in between; where the electrolyte is a soln. contg. a **Li** salt in a room temp. solid arom. carbonate. Another type of the battery has a solid polymer electrolyte contg. a crosslinked polyether polymer matrix and the above soln. as continuous phase in the matrix.

IT **115383-11-4**
RL: DEV (Device component use); USES (Uses)
(compns. and structure of secondary **Li** batteries contg. **Li**-intercalating electrodes and solid polymer electrolyte solns.)

RN 115383-11-4 CAPLUS
CN Oxirane, [[2-(2-methoxyethoxy)ethoxy]methyl]-, polymer with oxirane and [(2-propenyloxy)methyl]oxirane (9CI) (CA INDEX NAME)

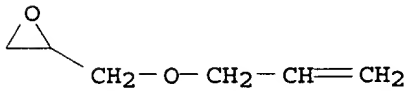
CM 1

CRN 71712-93-1
CMF C8 H16 O4



CM 2

CRN 106-92-3
CMF C6 H10 O2



CM 3

CRN 75-21-8
CMF C2 H4 O

IC ICM H01M010-40
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
ST secondary **Li** battery polymer polyether solid carbonate electrolyte
IT Secondary batteries
(**lithium**; compns. and structure of secondary **Li** batteries contg. **Li**-intercalating electrodes and solid polymer electrolyte solns.)
IT 7782-42-5, Graphite, uses 12031-95-7, **Lithium** titanium oxide (Li4Ti5O12)
RL: DEV (Device component use); USES (Uses)
(anode; compns. and structure of secondary **Li** batteries contg. **Li**-intercalating electrodes and solid polymer electrolyte solns.)
IT 12190-79-3, Cobalt **lithium** oxide (CoLiO2) 15365-14-7, Iron **lithium** phosphate (LiFePO4)
RL: DEV (Device component use); USES (Uses)
(cathode; compns. and structure of secondary **Li** batteries contg. **Li**-intercalating electrodes and solid polymer electrolyte solns.)
IT 79-10-7D, Acrylic acid, polyoxyalkylene derivs. **115383-11-4**
RL: DEV (Device component use); USES (Uses)
(compns. and structure of secondary **Li** batteries contg. **Li**-intercalating electrodes and solid polymer electrolyte solns.)
IT 82113-65-3, Bis(trifluoromethane sulfonyl) imide 90076-65-6
RL: DEV (Device component use); USES (Uses)
(salt, electrolyte; compns. and structure of secondary **Li** batteries contg. **Li**-intercalating electrodes and solid polymer electrolyte solns.)
IT 6222-20-4 486459-47-6
RL: DEV (Device component use); USES (Uses)
(solvent, electrolyte; compns. and structure of secondary **Li** batteries contg. **Li**-intercalating electrodes and solid polymer electrolyte solns.)

L48 ANSWER 4 OF 34 CAPLUS COPYRIGHT 2003 ACS
ACCESSION NUMBER: 2003:21139 CAPLUS
DOCUMENT NUMBER: 138:92809
TITLE: Secondary polymer electrolyte battery
INVENTOR(S): Takehara, Zenichiro; Sakai, Takaaki; Matsui, Shohei
PATENT ASSIGNEE(S): Daiso Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 5 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2003007338	A2	20030110	JP 2001-188726	20010621

PRIORITY APPLN. INFO.: JP 2001-188726 20010621

AB The battery uses a **Li**+ conducting film coated carbonaceous anode active mass, and an electrolyte contg. an amorphous branched polyether.

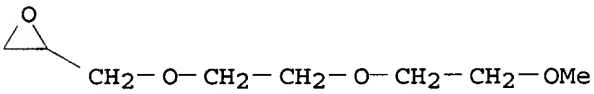
IT **115383-11-4D**, crosslinked **483965-66-8D**, crosslinked
RL: DEV (Device component use); USES (Uses)
(electrolytes contg. branched amorphous polyethers for secondary **lithium** batteries with **lithium** ion conducting film coated carbonaceous anodes)

RN 115383-11-4 CAPLUS

CN Oxirane, [[2-(2-methoxyethoxy)ethoxy]methyl]-, polymer with oxirane and [(2-propenyloxy)methyl]oxirane (9CI) (CA INDEX NAME)

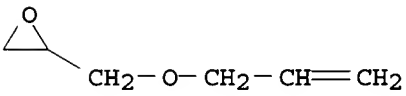
CM 1

CRN 71712-93-1
CMF C8 H16 O4



CM 2

CRN 106-92-3
CMF C6 H10 O2



CM 3

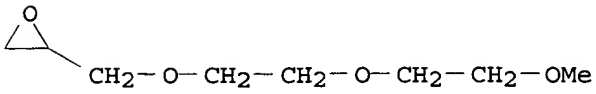
CRN 75-21-8
CMF C2 H4 O

RN 483965-66-8 CAPLUS

CN 1,2-Ethanediol, polymer with [[2-(2-methoxyethoxy)ethoxy]methyl]oxirane and [(2-propenyloxy)methyl]oxirane (9CI) (CA INDEX NAME)

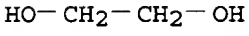
CM 1

CRN 71712-93-1
CMF C8 H16 O4



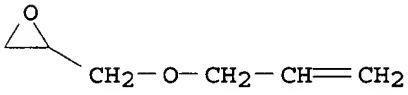
CM 2

CRN 107-21-1
CMF C2 H6 O2



CM 3

CRN 106-92-3
CMF C6 H10 O2



IC ICM H01M010-40
ICS H01M004-58; H01M004-62
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
ST secondary battery carbonaceous anode **lithium** conducting coating; amorphous branched polyether secondary **lithium** battery electrolyte
IT Battery anodes
(anodes from **lithium** ion conductive film coated carbonaceous materials in secondary batteries with branched amor. polyether contg. electrolytes)
IT Carbonaceous materials (technological products)
RL: DEV (Device component use); USES (Uses)
(anodes from **lithium** ion conductive film coated carbonaceous materials in secondary batteries with branched amor. polyether contg. electrolytes)
IT Battery electrolytes

KOROMA EIC1700

(electrolytes contg. branched amorphous polyethers for secondary **lithium** batteries with **lithium** ion conducting film coated carbonaceous anodes)

IT Secondary batteries
(**lithium**; secondary **lithium** batteries with electrolytes contg. branched amorphous polyethers and **lithium** ion conducting film coated carbonaceous anodes)

IT 7439-93-2, **Lithium**, uses
RL: DEV (Device component use); USES (Uses)
(anodes from **lithium** ion conductive film coated carbonaceous materials in secondary batteries with branched amor. polyether contg. electrolytes)

IT 132230-43-4D, crosslinked
RL: DEV (Device component use); USES (Uses)
(electrolytes contg. branched amorphous polyethers for secondary **lithium** batteries with **lithium** conducting film coated carbonaceous anodes)

IT **115383-11-4D**, crosslinked **483965-65-7D**, crosslinked **483965-66-8D**, crosslinked **483965-68-0D**, crosslinked
RL: DEV (Device component use); USES (Uses)
(electrolytes contg. branched amorphous polyethers for secondary **lithium** batteries with **lithium** ion conducting film coated carbonaceous anodes)

L48 ANSWER 5 OF 34 CAPLUS COPYRIGHT 2003 ACS
ACCESSION NUMBER: 2003:21138 CAPLUS
DOCUMENT NUMBER: 138:92808
TITLE: Secondary polymer electrolyte battery
INVENTOR(S): Takehara, Zenichiro; Sakai, Takaaki; Matsui, Shohei
PATENT ASSIGNEE(S): Daiso Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 5 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2003007337	A2	20030110	JP 2001-187543	20010621

PRIORITY APPLN. INFO.: JP 2001-187543 20010621

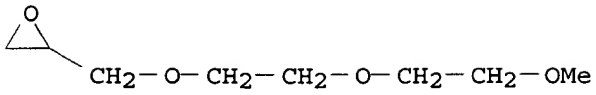
AB The battery uses a spinel type **Li** manganate LiMn2-xMxO4 (M = metal, x .gtoreq.0.05) cathode active mass and an electrolyte contg. an amorphous branched polyether.

IT **115383-11-4D**, crosslinked **483965-66-8D**, crosslinked
RL: DEV (Device component use); USES (Uses)
(electrolytes contg. branched amorphous polyethers for secondary **lithium** batteries with substituted **lithium** manganese oxides cathodes)

RN 115383-11-4 CAPLUS
CN Oxirane, [[2-(2-methoxyethoxy)ethoxy]methyl]-, polymer with oxirane and [(2-propenyloxy)methyl]oxirane (9CI) (CA INDEX NAME)

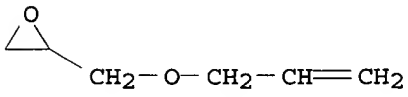
CM 1

CRN 71712-93-1
CMF C8 H16 O4



CM 2

CRN 106-92-3
CMF C6 H10 O2



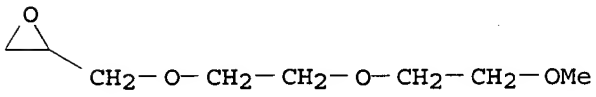
CM 3

CRN 75-21-8
CMF C2 H4 O

RN 483965-66-8 CAPLUS
CN 1,2-Ethanediol, polymer with [[2-(2-methoxyethoxy)ethoxy]methyl]oxirane and [(2-propenyloxy)methyl]oxirane (9CI) (CA INDEX NAME)

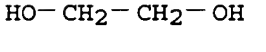
CM 1

CRN 71712-93-1
CMF C8 H16 O4



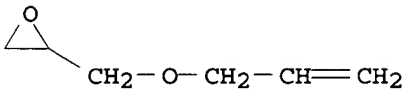
CM 2

CRN 107-21-1
CMF C2 H6 O2



CM 3

CRN 106-92-3
CMF C6 H10 O2



IC ICM H01M010-40
ICS C01G045-00; H01M004-02; H01M004-58
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
ST secondary battery cathode substituted **lithium** manganese oxide; amorphous branched polyether secondary **lithium** battery electrolyte
IT Battery electrolytes
(electrolytes contg. branched amorphous polyethers for secondary **lithium** batteries with substituted **lithium** manganese oxides cathodes)
IT Secondary batteries
(**lithium**; branched amorphous polyether contg. electrolytes and substituted **lithium** manganese oxides cathodes for for secondary **lithium** batteries)
IT Battery cathodes
(substituted **lithium** manganese oxides cathodes for secondary **lithium** batteries with electrolytes contg. branched amorphous polyethers)
IT **115383-11-4D**, crosslinked 115401-75-7D, crosslinked
483965-65-7D, crosslinked **483965-66-8D**, crosslinked
483965-68-0D, crosslinked
RL: DEV (Device component use); USES (Uses)
(electrolytes contg. branched amorphous polyethers for secondary **lithium** batteries with substituted **lithium** manganese oxides cathodes)
IT 145896-59-9, Aluminum **lithium** manganese oxide (Al0.1LiMn1.9O4)
145896-60-2, Aluminum **lithium** manganese oxide (Al0.2LiMn1.8O4)
216005-44-6, **Lithium** magnesium manganese oxide (LiMg0.05Mn1.95O4)
RL: DEV (Device component use); USES (Uses)
(substituted **lithium** manganese oxides cathodes for secondary **lithium** batteries with electrolytes contg. branched amorphous

polyethers)

L48 ANSWER 6 OF 34 CAPLUS COPYRIGHT 2003 ACS
ACCESSION NUMBER: 2002:904714 CAPLUS
DOCUMENT NUMBER: 137:387125
TITLE: Manganese based composite cathode for solid electrolyte **lithium** battery and the battery
INVENTOR(S): Inoue, Satoshi; Muranaga, Toshio; Sakai, Tetsuo; Fujieda, Takuya; Hsia, Yung Yang
PATENT ASSIGNEE(S): Ministry of Economy, Trade and Industry; National Industrial Research Institute, Japan; Daiso Co., Ltd.
SOURCE: Jpn. Kokai Tokkyo Koho, 7 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2002343433	A2	20021129	JP 2001-144037	20010515

PRIORITY APPLN. INFO.: JP 2001-144037 20010515

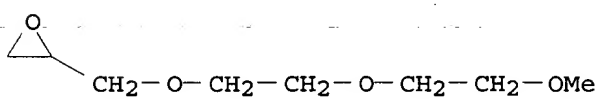
AB The cathode has a collector coated with a mixt. contg. LixMnO2 (x = 0.1-0.5) active mass particles, conductor particles, and a polymer electrolyte having a **Li** salt dissolved in a copolymer, having wt. av. mol. wt. .gtoreq.1,000,000 and contg. 30-95 mol% ethylene oxide and 5-70 mol% glycidyl ether having a poly(ethylene oxide) side chain having d.p. 1-12. The copolymer may also has ethylene oxide 30-94, the poly(ethylene oxide) side chain contg. glycidyl ether 5-69, and ally glycidyl ether 1-5 mol%, and the active mass mixt. may also contain poly(ethylene glycol) having wt. av. mol. wt. 500-2000.

IT **476300-68-2**
RL: DEV (Device component use); USES (Uses)
(cathode active mass mixts. contg. oxyethylene copolymer electrolytes for secondary **lithium** batteries)

RN 476300-68-2 CAPLUS
CN Oxirane, [[2-(2-methoxyethoxy)ethoxy]methyl]-, polymer with [(2-propenyloxy)methyl]oxirane (9CI) (CA INDEX NAME)

CM 1

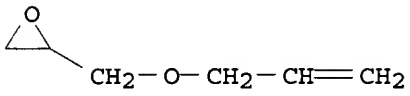
CRN 71712-93-1
CMF C8 H16 O4



CM 2

KOROMA EIC1700

CRN 106-92-3
CMF C6 H10 O2



IC ICM H01M010-40
ICS H01M004-02
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
ST secondary **lithium** battery cathode polymer electrolyte;
lithium manganese oxide cathode polymer electrolyte battery
IT Battery cathodes
(cathode active mass mixts. contg. oxyethylene copolymer electrolytes for secondary **lithium** batteries)
IT Carbon black, uses
RL: DEV (Device component use); USES (Uses)
(cathode active mass mixts. contg. oxyethylene copolymer electrolytes for secondary **lithium** batteries)
IT 90076-65-6 115401-75-7, Ethylene oxide-2-(2-methoxyethoxy)ethyl glycidyl ether copolymer 126941-24-0, **Lithium** manganese oxide (Li0.66Mn2O4) **476300-68-2**
RL: DEV (Device component use); USES (Uses)
(cathode active mass mixts. contg. oxyethylene copolymer electrolytes for secondary **lithium** batteries)

L48 ANSWER 7 OF 34 CAPLUS COPYRIGHT 2003 ACS
ACCESSION NUMBER: 2002:812220 CAPLUS
DOCUMENT NUMBER: 137:339973
TITLE: **Lithium** ion secondary batteries using polymer electrolytes
INVENTOR(S): Ogata, Naoya; Sata, Tsutomu
PATENT ASSIGNEE(S): Torekion K. K., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 5 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2002313424	A2	20021025	JP 2001-109432	20010409

PRIORITY APPLN. INFO.: JP 2001-109432 20010409
AB The title polymer electrolyte provided between an anode and a cathode comprises .ltoreq.95 wt.% **Li** salt-contg. nonaq. electrolytic soln. which is impregnated on a crosslinked polymer contg. allylated glycidyl ether-ethylene oxide copolymer and polyether-polyol poly(meth)acrylate copolymer. The polymer electrolytes provides the

secondary batteries with high ion cond. and high tensile strength.

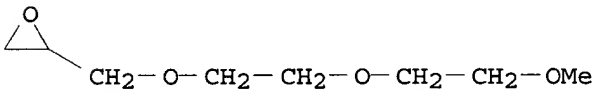
IT **473915-97-8**, Ethylene oxide-methoxydiethylene glycol glycidyl ether-allylglycidyl ether-glyceride-ethylene oxide-propylene oxide copolymer
RL: DEV (Device component use); MOA (Modifier or additive use); PRP (Properties); USES (Uses)
(electrolyte matrix; **lithium** ion secondary batteries using polymer electrolytes)

RN 473915-97-8 CAPLUS

CN Oxirane, [[2-(2-methoxyethoxy)ethoxy]methyl]-, polymer with methyloxirane polymer with oxirane ether with 1,2,3-propanetriol (3:1), oxirane and [(2-propenyloxy)methyl]oxirane (9CI) (CA INDEX NAME)

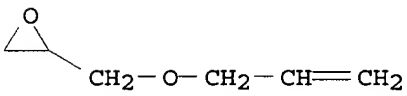
CM 1

CRN 71712-93-1
CMF C8 H16 O4



CM 2

CRN 106-92-3
CMF C6 H10 O2



CM 3

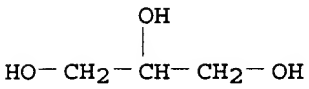
CRN 75-21-8
CMF C2 H4 O

CM 4

CRN 9082-00-2
CMF C3 H8 O3 . 3 (C3 H6 O . C2 H4 O)x

CM 5

CRN 56-81-5
CMF C3 H8 O3

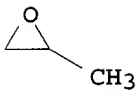


CM 6

CRN 9003-11-6
CMF (C3 H6 O . C2 H4 O)x
CCI PMS

CM 7

CRN 75-56-9
CMF C3 H6 O



CM 8

CRN 75-21-8
CMF C2 H4 O

IC ICM H01M010-40
ICS H01M010-40; C08F299-02; H01M004-02
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 38, 56, 72
ST glycidyl ether ethylene oxide copolymer electrolyte **lithium** salt impregnation; polyether polyol polyacrylate copolymer electrolyte **lithium** salt impregnation battery
IT Ionic conductivity
Polymer electrolytes
Secondary batteries
Secondary battery separators

Tensile strength
(**lithium** ion secondary batteries using polymer electrolytes)

IT Polyethers, uses
RL: DEV (Device component use); PRP (Properties); USES (Uses)
(polyether-polyol poly(meth)acrylate copolymer.; **lithium** ion secondary batteries using polymer electrolytes)

IT Alcohols, uses
RL: DEV (Device component use); PRP (Properties); USES (Uses)
(polyhydric, polyether-polyol poly(meth)acrylate copolymer.; **lithium** ion secondary batteries using polymer electrolytes)

IT **473915-97-8**, Ethylene oxide-methoxydiethylene glycol glycidyl ether-allylglycidyl ether-glyceride-ethylene oxide-propylene oxide copolymer
RL: DEV (Device component use); MOA (Modifier or additive use); PRP (Properties); USES (Uses)
(electrolyte matrix; **lithium** ion secondary batteries using polymer electrolytes)

IT 12031-95-7, **Lithium** titanate (Li4Ti5O12) 12190-79-3, Cobalt **lithium** oxide (CoLiO2)
RL: MOA (Modifier or additive use); PRP (Properties); USES (Uses)
(electrolyte, impregnation on polymers; **lithium** ion secondary batteries using polymer electrolytes)

IT 686-31-7, tert-Amylperoxy-2-ethylhexanoate
RL: DEV (Device component use); PRP (Properties); USES (Uses)
(electrolyte; **lithium** ion secondary batteries using polymer electrolytes)

L48 ANSWER 8 OF 34 CAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 2002:773828 CAPLUS
DOCUMENT NUMBER: 137:297370
TITLE: Vanadium oxide cathode for solid polymer electrolyte **lithium** battery, the battery, and method charging the battery
INVENTOR(S): Inoue, Satoshi; Muranaga, Toshio; Sakai, Tetsuo
PATENT ASSIGNEE(S): Ministry of Economy, Trade and Industry; National Industrial Research Institute, Japan; Daiso Co., Ltd.
SOURCE: Jpn. Kokai Tokkyo Koho, 7 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2002298844	A2	20021011	JP 2001-96504	20010329

PRIORITY APPLN. INFO.: JP 2001-96504 20010329

AB The cathode has a mixt. contg. an active mass V2-2.5O5, a polymer electrolyte contg. a **Li** salt dissolved in a ethylene oxide copolymer, contg. 5-70 mol% side chains of glycidyl ether units having 1-12 ethylene oxide units, having wt. av. mol. wt. .gtoreq.1,000,000 and a conductor applied on a collector. Another type of copolymer has ethylene

oxide units 30-94, side chain glycidyl ether units having 1-12 ethylene oxide units 5-69, and side chain allyl glycidyl ether units 1-5 mol%. The mixt. may also contain polyethylene glycol or its ether having wt. av. mol. wt. 500-2000. The battery uses the above cathode, a **Li** anode, and an electrolyte contg. a **Li** salt dissolved in a crosslinked copolymer having ethylene oxide units 30-94, side chain glycidyl ether units having 1-12 ethylene oxide units 5-69, and side chain allyl glycidyl ether units 1-5 mol%. The battery is charged with a cut off voltage 3.6-4.2 V.

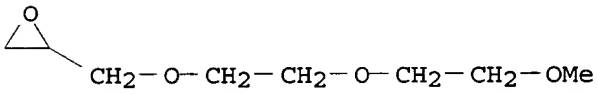
IT **115383-11-4D**, crosslinked
RL: DEV (Device component use); USES (Uses)
(crosslinked ethylene oxide copolymer electrolytes for secondary **lithium** batteries with vanadium oxide cathodes)

RN 115383-11-4 CAPLUS

CN Oxirane, [[2-(2-methoxyethoxy)ethoxy]methyl]-, polymer with oxirane and [(2-propenyloxy)methyl]oxirane (9CI) (CA INDEX NAME)

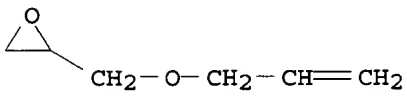
CM 1

CRN 71712-93-1
CMF C8 H16 O4



CM 2

CRN 106-92-3
CMF C6 H10 O2



CM 3

CRN 75-21-8
CMF C2 H4 O

IT **115383-11-4**

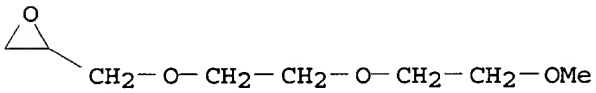
RL: DEV (Device component use); USES (Uses)
(vanadium oxide cathodes contg. ethylene oxide copolymer electrolytes for secondary **lithium** batteries)

RN 115383-11-4 CAPLUS

CN Oxirane, [[2-(2-methoxyethoxy)ethoxy]methyl]-, polymer with oxirane and [(2-propenyloxy)methyl]oxirane (9CI) (CA INDEX NAME)

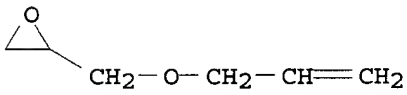
CM 1

CRN 71712-93-1
CMF C8 H16 O4



CM 2

CRN 106-92-3
CMF C6 H10 O2



CM 3

CRN 75-21-8
CMF C2 H4 O

IC ICM H01M004-58
ICS H01M004-02; H01M010-40

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)

ST secondary **lithium** battery vanadium oxide cathode polymer electrolyte; ethylene oxide copolymer electrolyte secondary **lithium** battery

IT Battery electrolytes
(crosslinked ethylene oxide copolymer electrolytes for secondary **lithium** batteries with vanadium oxide cathodes)

IT Secondary batteries
(**lithium**; secondary **lithium** batteries ethylene

KOROMA EIC1700

oxide copolymer contg. vanadium oxide cathodes and crosslinked ethylene oxide copolymer electrolytes)

IT Battery cathodes
(vanadium oxide cathodes contg. ethylene oxide copolymer electrolytes for secondary **lithium** batteries)

IT Carbon black, uses
RL: DEV (Device component use); USES (Uses)
(vanadium oxide cathodes contg. ethylene oxide copolymer electrolytes for secondary **lithium** batteries)

IT **115383-11-4D**, crosslinked
RL: DEV (Device component use); USES (Uses)
(crosslinked ethylene oxide copolymer electrolytes for secondary **lithium** batteries with vanadium oxide cathodes)

IT 1314-62-1, Vanadium oxide (V2O5), uses 90076-65-6 **115383-11-4**
115401-75-7, Ethylene oxide-2-(2-methoxyethoxy)ethyl glycidyl ether copolymer
RL: DEV (Device component use); USES (Uses)
(vanadium oxide cathodes contg. ethylene oxide copolymer electrolytes for secondary **lithium** batteries)

L48 ANSWER 9 OF 34 CAPLUS COPYRIGHT 2003 ACS
ACCESSION NUMBER: 2002:672608 CAPLUS
DOCUMENT NUMBER: 137:202356
TITLE: Ion-conducting adhesive porous films, polymer gel electrolytes from them, their manufacture, and applications
INVENTOR(S): Yamaguchi, Mutsuko; Uetani, Yoshihiro; Kii, Keisuke; Yamamura, Takashi; Nakamura, Seiji; Tabuchi, Masato
PATENT ASSIGNEE(S): Nitto Denko Corp., Japan; Daiso Co., Ltd.
SOURCE: Jpn. Kokai Tokkyo Koho, 20 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2002249742	A2	20020906	JP 2001-358853	20011126

PRIORITY APPLN. INFO.: JP 2000-373466 A 20001207

AB The films, showing 180.degree. peeling strength .gtoreq.2 N/20 mm, comprise porous base films and polymers having poly(meth)acrylate, poly(ethylene oxide), poly(propylene oxide), poly(ethylene oxide/propylene oxide), polyphosphazene, poly(vinyl ether), or polysiloxane main chains and oligo(alkylene oxide) side chains. Polymer gel electrolytes manufd. using them are useful for batteries and capacitors. Thus, porous ultrahigh-mol.-wt. polyethylene film was coated with a compn. contg. glycidyl methoxyethoxyethyl ether-allyl glycidyl ether-ethylene oxide (49:51:1) copolymer and Blemmer PDE 100, soaked in a soln. contg. LiClO4, and heated to give a gel showing cond. 8.0 .times. 10-4 S/cm.

IT **115383-11-4P**
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT

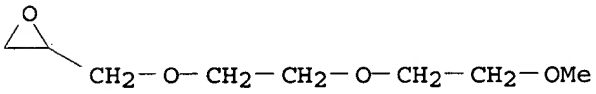
(Reactant or reagent)
(ion-conducting adhesive porous films for polymer gel electrolytes)

RN 115383-11-4 CAPLUS

CN Oxirane, [[2-(2-methoxyethoxy)ethoxy]methyl]-, polymer with oxirane and [(2-propenyloxy)methyl]oxirane (9CI) (CA INDEX NAME)

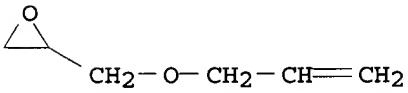
CM 1

CRN 71712-93-1
CMF C8 H16 O4



CM 2

CRN 106-92-3
CMF C6 H10 O2



CM 3

CRN 75-21-8
CMF C2 H4 O

IT **454171-46-1P**
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(ion-conducting adhesive porous films for polymer gel electrolytes)

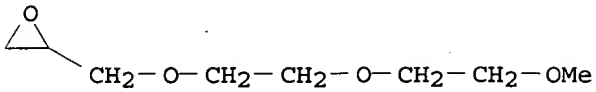
RN 454171-46-1 CAPLUS

CN 2-Propenoic acid, 2-methyl-, oxydi-2,1-ethanediyl ester, polymer with [[2-(2-methoxyethoxy)ethoxy]methyl]oxirane, oxirane and [(2-propenyloxy)methyl]oxirane (9CI) (CA INDEX NAME)

CM 1

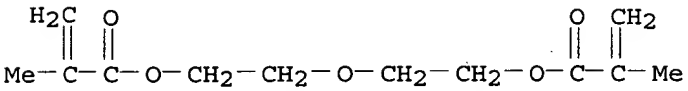
CRN 71712-93-1

CMF C8 H16 O4



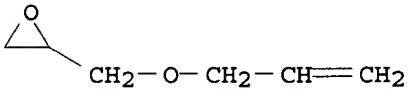
CM 2

CRN 2358-84-1
CMF C12 H18 O5



CM 3

CRN 106-92-3
CMF C6 H10 O2



CM 4

CRN 75-21-8
CMF C2 H4 O

IC ICM C09J007-02
ICS C08J009-36; C09J009-02; C09J171-00; C09J183-12; C09J201-00; H01B001-06; H01B013-00; H01G009-02; H01G009-035; H01G009-038; H01M010-40; C08L101-00

CC 38-3 (Plastics Fabrication and Uses)
Section cross-reference(s): 52, 76

ST ion conducting adhesive porous film electrolyte; glycidyl ether polymer gel electrolyte battery; capacitor gel electrolyte adhesive porous film

IT Porous materials

(films; ion-conducting adhesive porous films for polymer gel electrolytes)
IT Capacitors
Electrolytes
Primary batteries
Secondary batteries
(ion-conducting adhesive porous films for polymer gel electrolytes)
IT Polyethers, uses
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(oligo(alkylene oxide) side chain-contg.; ion-conducting adhesive porous films for polymer gel electrolytes)
IT Polyoxyalkylenes, uses
Polyphosphazenes
Polysiloxanes, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(oligo(alkylene oxide) side chain-contg.; ion-conducting adhesive porous films for polymer gel electrolytes)
IT Fluoropolymers, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(porous base film; ion-conducting adhesive porous films for polymer gel electrolytes)
IT Films
(porous; ion-conducting adhesive porous films for polymer gel electrolytes)
IT 7791-03-9, **Lithium** perchlorate
RL: TEM (Technical or engineered material use); USES (Uses)
(electrolyte; ion-conducting adhesive porous films for polymer gel electrolytes)
IT **115383-11-4P**
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)
(ion-conducting adhesive porous films for polymer gel electrolytes)
IT **454171-46-1P**
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(ion-conducting adhesive porous films for polymer gel electrolytes)
IT 9002-84-0, PTFE
RL: TEM (Technical or engineered material use); USES (Uses)
(porous base film; ion-conducting adhesive porous films for polymer gel electrolytes)
IT 9002-88-4, Polyethylene
RL: TEM (Technical or engineered material use); USES (Uses)
(ultrahigh-mol.-wt., porous base film; ion-conducting adhesive porous films for polymer gel electrolytes)

L48 ANSWER 10 OF 34 CAPLUS COPYRIGHT 2003 ACS
ACCESSION NUMBER: 2002:512072 CAPLUS
DOCUMENT NUMBER: 137:186105
TITLE: Ionic Conduction Mechanism of PEO-Type Polymer Electrolytes Investigated by the Carrier Diffusion Phenomenon Using PGSE-NMR

AUTHOR(S): Kataoka, Hiroshi; Saito, Yuria; Tabuchi, Masato; Wada, Yoshihiko; Sakai, Takaaki
CORPORATE SOURCE: National Institute of Advanced Industrial Science and Technology, AIST, Ikeda, Osaka, 563-8577, Japan
SOURCE: Macromolecules (2002), 35(16), 6239-6244
CODEN: MAMOBX; ISSN: 0024-9297
PUBLISHER: American Chemical Society
DOCUMENT TYPE: Journal
LANGUAGE: English

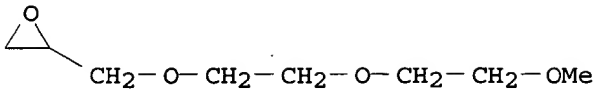
AB The diffusive behavior of the cation and anion species of the PEO-type polymer electrolyte was investigated using pulsed gradient spin-echo NMR to elucidate the carrier conduction mechanism of the polymer electrolyte. Compared with the random diffusive behavior generally obsd. in electrolyte solns., the carriers in the PEO-type polymer electrolyte showed a characteristic migration feature of a restricted condition esp. after the application of stress on the membrane. This is attributed to carrier hopping along the polymer chains through Coulombic interaction between the carriers and the ethylene oxide sites on the chains. The restricted feature was in agreement with the simple boundary restriction model. The diffusion time dependence of the echo intensity change also supported the belief that the carrier migration in the polymer electrolyte followed the simple boundary model. Considering the actual situation of the polymer electrolyte, the polymer chains spread in all directions to create a random network structure, which consequently permits 3-dimensional migration as random diffusion under the condition of long-time limit. The diffusion manner of the cation species along and across the stretched direction was different at 80.degree.. This was due to the difference in the diffusion coeff. between the 2 directions from the fitted results according to the simple boundary model. This confirmed that the alignment of the sites in the polymer electrolyte by strain would be effective for creating a highly conductive pathway for **Li** ion transport even if application of stress is disadvantageous for segmental mobility.

IT **115383-11-4**, Allyl glycidyl ether-ethylene oxide-2-(2-methoxyethoxy)ethyl glycidyl ether copolymer
RL: PEP (Physical, engineering or chemical process); PRP (Properties); PYP (Physical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(polymer electrolyte; ionic conduction mechanism of PEO-type polymer electrolytes investigated by carrier diffusion phenomenon using PGSE-NMR)

RN 115383-11-4 CAPLUS
CN Oxirane, [[2-(2-methoxyethoxy)ethoxy]methyl]-, polymer with oxirane and [(2-propenyloxy)methyl]oxirane (9CI) (CA INDEX NAME)

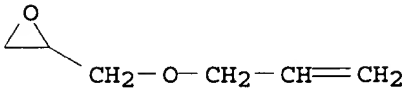
CM 1

CRN 71712-93-1
CMF C8 H16 O4



CM 2

CRN 106-92-3
CMF C6 H10 O2



CM 3

CRN 75-21-8
CMF C2 H4 O

CC 36-5 (Physical Properties of Synthetic High Polymers)
ST ionic conduction polyoxyethylene polymer electrolyte carrier diffusion
IT Diffusion
Ionic conductivity
Polymer electrolytes
Spin-lattice relaxation
(ionic conduction mechanism of PEO-type polymer electrolytes investigated by carrier diffusion phenomenon using PGSE-NMR)
IT Membranes, nonbiological
(polymer electrolyte; ionic conduction mechanism of PEO-type polymer electrolytes investigated by carrier diffusion phenomenon using PGSE-NMR)
IT Polyoxyalkylenes, properties
RL: PEP (Physical, engineering or chemical process); PRP (Properties); PYP (Physical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(polymer electrolyte; ionic conduction mechanism of PEO-type polymer electrolytes investigated by carrier diffusion phenomenon using PGSE-NMR)
IT Stress, mechanical
(uniaxial; ionic conduction mechanism of PEO-type polymer electrolytes investigated by carrier diffusion phenomenon using PGSE-NMR)
IT 90076-65-6, **Lithium** bis(trifluoromethanesulfonyl)imide

115383-11-4, Allyl glycidyl ether-ethylene oxide-2-(2-methoxyethoxy)ethyl glycidyl ether copolymer
RL: PEP (Physical, engineering or chemical process); PRP (Properties); PYP (Physical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(polymer electrolyte; ionic conduction mechanism of PEO-type polymer electrolytes investigated by carrier diffusion phenomenon using PGSE-NMR)

REFERENCE COUNT: 14 THERE ARE 14 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L48 ANSWER 11 OF 34 CAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 2002:264562 CAPLUS
DOCUMENT NUMBER: 137:94447
TITLE: Ionic conductivity and mechanical properties of polymer networks prepared from high molecular weight branched poly(oxyethylene)s
AUTHOR(S): Matoba, Yasuo; Ikeda, Yuko; Kohjiya, Shinzo
CORPORATE SOURCE: Daiso Co., Ltd., Otakasu, Amagasaki, 660-0842, Japan
SOURCE: Solid State Ionics (2002), 147(3,4), 403-409
CODEN: SSIOD3; ISSN: 0167-2738
PUBLISHER: Elsevier Science B.V.
DOCUMENT TYPE: Journal
LANGUAGE: English

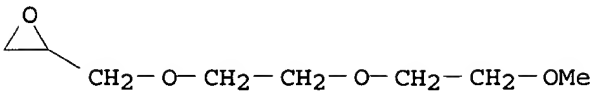
AB Polymer networks were prepd. from high mol. wt. branched poly(oxyethylene)s (POE) with di(oxyethylene) units and allyloxymethyl groups as side segments, and their ionic cond. and mech. properties were investigated from the viewpoint of polymer solid electrolyte. The optimal crosslinking brought about both high ionic cond. comparable to the non-crosslinked high mol. wt. branched poly(oxyethylene)s and good mech. properties to give a better dimensional stability, when the network was doped with LiN(SO2CF3)2 in the concn. of [**Li**]/[-O-] = 0.06. This observation implies that the control of network-chain d. in the prepn. of networks from the high mol. wt. branched poly(oxyethylene) is useful for the material design of practical polymer solid electrolyte, as well as their compn., the kind of salt and its concn.

IT **115383-11-4DP**, Allyl glycidyl ether-1,2-epoxy-4,7,10-trioxaundecane-ethylene oxide copolymer, **lithium** complexes
RL: POF (Polymer in formulation); PRP (Properties); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(ionic cond. and mech. properties of polymer networks prepd. from high mol. wt. branched poly(oxyethylene)s)

RN 115383-11-4 CAPLUS
CN Oxirane, [[2-(2-methoxyethoxy)ethoxy]methyl]-, polymer with oxirane and [(2-propenyloxy)methyl]oxirane (9CI) (CA INDEX NAME)

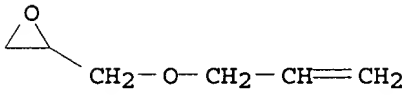
CM 1

CRN 71712-93-1
CMF C8 H16 O4



CM 2

CRN 106-92-3
CMF C6 H10 O2



CM 3

CRN 75-21-8
CMF C2 H4 O

CC 37-5 (Plastics Manufacture and Processing)
Section cross-reference(s): 52, 76

ST polyoxyethylene network solid electrolyte ionic cond tensile property

IT Polyoxyalkylenes, preparation
RL: POF (Polymer in formulation); PRP (Properties); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(complexes; ionic cond. and mech. properties of polymer networks prepd. from high mol. wt. branched poly(oxyethylene)s)

IT Fusion enthalpy
Ionic conductivity
Polymer electrolytes
Tensile strength
(ionic cond. and mech. properties of polymer networks prepd. from high mol. wt. branched poly(oxyethylene)s)

IT 7791-03-9DP, **Lithium** perchlorate, poly(oxyethylene) complexes
14283-07-9DP, **Lithium** tetrafluoroborate, poly(oxyethylene) complexes 90076-65-6DP, **Lithium** bis(trifluoromethylsulfonyl)imide, poly(oxyethylene) complexes **115383-11-4DP**, Allyl glycidyl ether-1,2-epoxy-4,7,10-trioxaundecane-ethylene oxide copolymer, **lithium** complexes
RL: POF (Polymer in formulation); PRP (Properties); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(ionic cond. and mech. properties of polymer networks prepd. from high mol. wt. branched poly(oxyethylene)s)

REFERENCE COUNT: 26 THERE ARE 26 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L48 ANSWER 12 OF 34 CAPLUS COPYRIGHT 2003 ACS
ACCESSION NUMBER: 2002:253402 CAPLUS
DOCUMENT NUMBER: 136:297372
TITLE: Resin composition for polymer gel electrolyte, composition of polymer gel electrolyte, laminated electrode, and electrochemical device using the electrolyte
INVENTOR(S): Sonobe, Hiroyuki; Amanokura, Hitoshi; Miura, Katsuto; Tabuchi, Masato; Nishimura, Noboru; Okumura, Takefumi
PATENT ASSIGNEE(S): Hitachi Chemical Co., Ltd., Japan; Daiso Co., Ltd.; Hitachi Ltd.
SOURCE: Jpn. Kokai Tokkyo Koho, 18 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2002100405	A2	20020405	JP 2000-286215	20000920

PRIORITY APPLN. INFO.: JP 2000-286215 20000920
GI

I II

AB The resin compn. contains a polyether copolymer of monomers I (R1 = C1-12 alkyl, C2-8 alkenyl, C3-8 cycloalkyl, C6-14 aryl, C7-12 aralkyl, or tetrahydropyranyl group) and ethene oxide, having repeating units II (l = 1-12) and -(CH2CH2O)-, and a fluoropolymer. The polymer gel electrolyte contains the polymer resin, and an electrolyte soln. The laminated electrode has the polymer gel electrolyte crosslinked on a cathode or an anode. The electrochem. device contains the electrolyte.

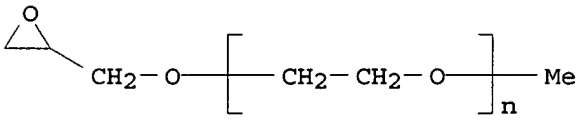
IT **333970-93-7 406727-28-4 406727-30-8 406727-44-4**
RL: DEV (Device component use); USES (Uses)
(compns. of resins and polymer gel electrolytes for electrolyte-electrode laminates for secondary **lithium** batteries)

RN 333970-93-7 CAPLUS
CN Oxirane, [(2-propenyloxy)methyl]-, polymer with .alpha.-methyl-.omega.-

(oxiranylmethoxy)poly(oxy-1,2-ethanediyl) and oxirane (9CI) (CA INDEX NAME)

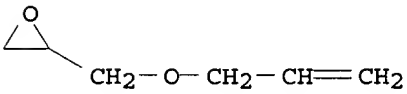
CM 1

CRN 40349-67-5
CMF (C2 H4 O)n C4 H8 O2
CCI PMS



CM 2

CRN 106-92-3
CMF C6 H10 O2



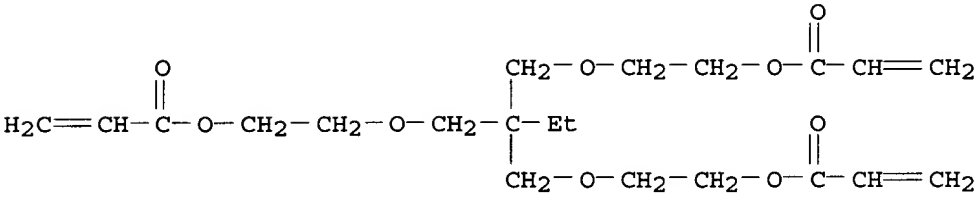
CM 3

CRN 75-21-8
CMF C2 H4 O

RN 406727-28-4 CAPLUS
CN 2-Propenoic acid, [2-ethyl-2-[[2-[(1-oxo-2-propenyl)oxy]ethoxy]methyl]-1,3-propanediyl]bis(oxy-2,1-ethanediyl) ester, polymer with .alpha.-methyl-.omega.-(oxiranylmethoxy)poly(oxy-1,2-ethanediyl), oxirane and [(2-propenyloxy)methyl]oxirane (9CI) (CA INDEX NAME)

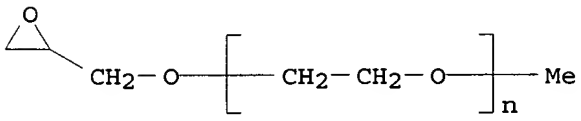
CM 1

CRN 75577-70-7
CMF C21 H32 O9



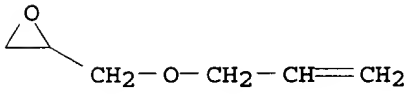
CM 2

CRN 40349-67-5
CMF (C2 H4 O)n C4 H8 O2
CCI PMS



CM 3

CRN 106-92-3
CMF C6 H10 O2



CM 4

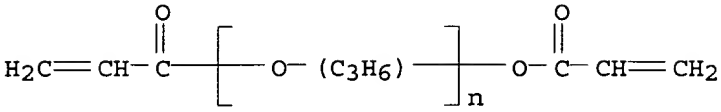
CRN 75-21-8
CMF C2 H4 O

RN 406727-30-8 CAPLUS
CN Oxirane, [(2-propenyloxy)methyl]-, polymer with .alpha.-methyl-.omega.-(oxiranylmethoxy)poly(oxy-1,2-ethanediyl), oxirane and .alpha.-(1-oxo-2-propenyl)-.omega.-[(1-oxo-2-propenyl)oxy]poly[oxy(methyl-1,2-ethanediyl)] (9CI) (CA INDEX NAME)

KOROMA EIC1700

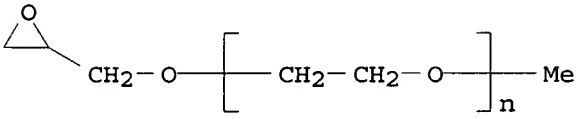
CM 1

CRN 52496-08-9
CMF (C3 H6 O)n C6 H6 O3
CCI IDS, PMS



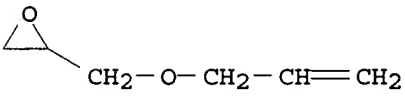
CM 2

CRN 40349-67-5
CMF (C2 H4 O)n C4 H8 O2
CCI PMS



CM 3

CRN 106-92-3
CMF C6 H10 O2



CM 4

CRN 75-21-8
CMF C2 H4 O

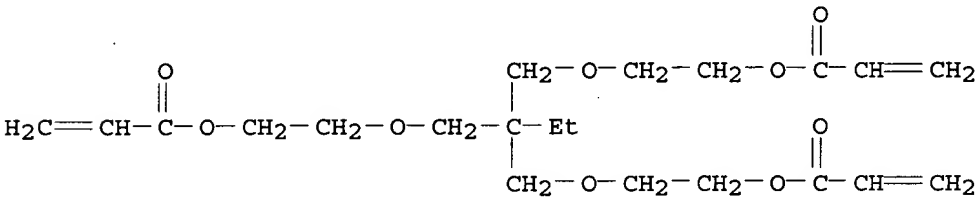
RN 406727-44-4 CAPLUS

KOROMA EIC1700

CN 2-Propenoic acid, [2-ethyl-2-[[2-[(1-oxo-2-propenyl)oxy]ethoxy]methyl]-1,3-propanediyl]bis(oxy-2,1-ethanediyl) ester, polymer with .alpha.-methyl-.omega.-(oxiranylmethoxy)poly(oxy-1,2-ethanediyl), oxirane, .alpha.-(1-oxo-2-propenyl)-.omega.-[(1-oxo-2-propenyl)oxy]poly[oxy(methyl-1,2-ethanediyl)] and [(2-propenyloxy)methyl]oxirane (9CI) (CA INDEX NAME)

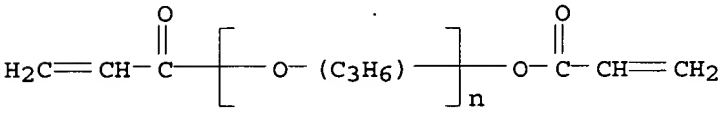
CM 1

CRN 75577-70-7
CMF C21 H32 O9



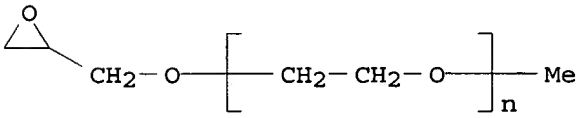
CM 2

CRN 52496-08-9
CMF (C3 H6 O)n C6 H6 O3
CCI IDS, PMS



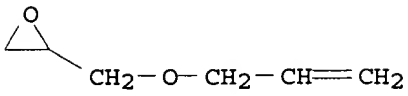
CM 3

CRN 40349-67-5
CMF (C2 H4 O)n C4 H8 O2
CCI PMS



CM 4

CRN 106-92-3
CMF C6 H10 O2



CM 5

CRN 75-21-8
CMF C2 H4 O

IC ICM H01M010-40
ICS C08G065-04; C08G065-22; C08K005-00; C08L027-12; C08L071-00; H01B001-06; H01G009-038; H01G009-00; H01M006-18
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
ST electrochem device electrolyte gel polymer compn
IT Battery electrolytes
(compns. of resins and polymer gel electrolytes for electrolyte-electrode laminates for secondary **lithium** batteries)
IT Fluoropolymers, uses
RL: DEV (Device component use); USES (Uses)
(compns. of resins and polymer gel electrolytes for electrolyte-electrode laminates for secondary **lithium** batteries)
IT 96-48-0, .gamma.-Butyrolactone 96-49-1, Ethylene carbonate 108-32-7, Propylene carbonate 616-38-6, Dimethyl carbonate 9011-17-0, Kynar 2801 14283-07-9, **Lithium** fluoroborate 21324-40-3, **Lithium** hexafluorophosphate 24937-79-9, Poly(vinylidene fluoride) 156219-03-3 **333970-93-7 406727-28-4 406727-30-8 406727-44-4** 406727-45-5
RL: DEV (Device component use); USES (Uses)
(compns. of resins and polymer gel electrolytes for electrolyte-electrode laminates for secondary **lithium** batteries)

L48 ANSWER 13 OF 34 CAPLUS COPYRIGHT 2003 ACS
ACCESSION NUMBER: 2002:253401 CAPLUS
DOCUMENT NUMBER: 136:297371
TITLE: Resin composition for polymer gel electrolyte, composition of polymer gel electrolyte, laminated electrode, and electrochemical device using the electrolyte

INVENTOR(S): Sonobe, Hiroyuki; Amanokura, Hitoshi; Miura, Katsuto; Tabuchi, Masato; Nishimura, Noboru; Okumura, Takefumi
PATENT ASSIGNEE(S): Hitachi Chemical Co., Ltd., Japan; Daiso Co., Ltd.; Hitachi Ltd.
SOURCE: Jpn. Kokai Tokkyo Koho, 21 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2002100404	A2	20020405	JP 2000-286202	20000920

PRIORITY APPLN. INFO.: JP 2000-286202 20000920
GI

I II

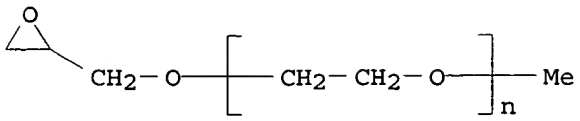
AB The resin compn. contains a polyether copolymer of monomers I (R1 = C1-12 alkyl, C2-8 alkenyl, C3-8 cycloalkyl, C6-14 aryl, C7-12 aralkyl, or tetrahydropyranyl group) and ethene oxide, having repeating units II (l = 1-12) and -(CH2CH2O)-, and a compd. having .gtoreq.3 ethylenic unsatn. bond or a melamine compd. having ethylenic unsatn. bond. The polymer gel electrolyte contains the polymer resin, and an electrolyte soln. The laminated electrode has the polymer gel electrolyte crosslinked on a cathode or an anode. The electrochem. device contains the electrolyte.

IT **333970-93-7 406727-27-3 406727-28-4 406727-30-8**
RL: DEV (Device component use); USES (Uses)
(compns. of resins and polymer gel electrolytes for electrolyte-electrode laminates for secondary **lithium** batteries)

RN 333970-93-7 CAPLUS
CN Oxirane, [(2-propenyloxy)methyl]-, polymer with .alpha.-methyl-.omega.-(oxiranylmethoxy)poly(oxy-1,2-ethanediyl) and oxirane (9CI) (CA INDEX NAME)

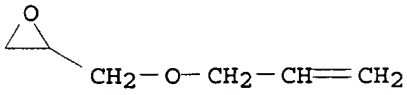
CM 1

CRN 40349-67-5
CMF (C2 H4 O)n C4 H8 O2
CCI PMS



CM 2

CRN 106-92-3
CMF C6 H10 O2



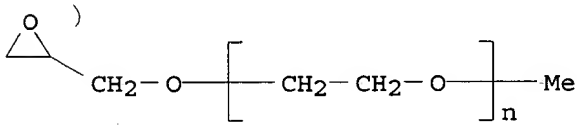
CM 3

CRN 75-21-8
CMF C2 H4 O

RN 406727-27-3 CAPLUS
CN 2-Propenoic acid, 2-ethyl-2-[[(1-oxo-2-propenyl)oxy]methyl]-1,3-propanediyl ester, polymer with .alpha.-methyl-.omega.-(oxiranylmethoxy)poly(oxy-1,2-ethanediyl), oxirane and [(2-propenyloxy)methyl]oxirane (9CI) (CA INDEX NAME)

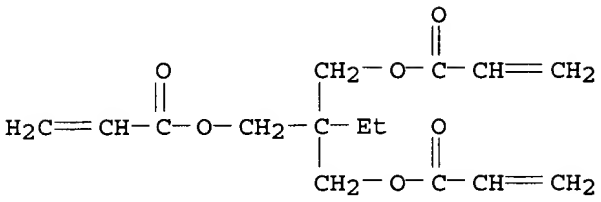
CM 1

CRN 40349-67-5
CMF (C2 H4 O)n C4 H8 O2
CCI PMS



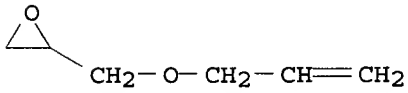
CM 2

CRN 15625-89-5
CMF C15 H20 O6



CM 3

CRN 106-92-3
CMF C6 H10 O2



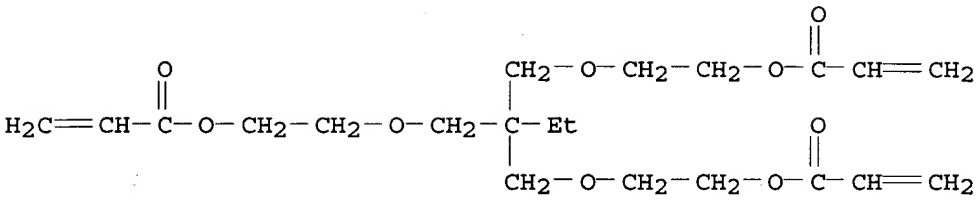
CM 4

CRN 75-21-8
CMF C2 H4 O

RN 406727-28-4 CAPLUS
CN 2-Propenoic acid, [2-ethyl-2-[[2-[(1-oxo-2-propenyl)oxy]ethoxy]methyl]-1,3-propanediyl]bis(oxy-2,1-ethanediyl) ester, polymer with .alpha.-methyl-.omega.-(oxiranylmethoxy)poly(oxy-1,2-ethanediyl), oxirane and [(2-propenyloxy)methyl]oxirane (9CI) (CA INDEX NAME)

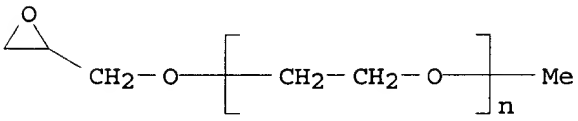
CM 1

CRN 75577-70-7
CMF C21 H32 O9



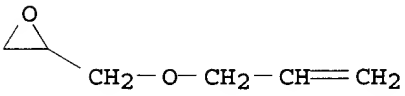
CM 2

CRN 40349-67-5
CMF (C2 H4 O)n C4 H8 O2
CCI PMS



CM 3

CRN 106-92-3
CMF C6 H10 O2



CM 4

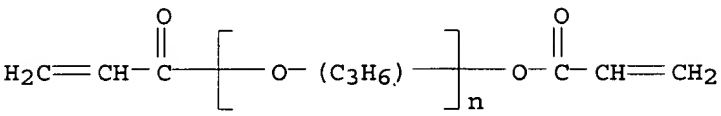
CRN 75-21-8
CMF C2 H4 O

RN 406727-30-8 CAPLUS
CN Oxirane, [(2-propenyloxy)methyl]-, polymer with .alpha.-methyl-.omega.-(oxiranylmethoxy)poly(oxy-1,2-ethanediyl), oxirane and .alpha.-(1-oxo-2-propenyl)-.omega.-[(1-oxo-2-propenyl)oxy]poly[oxy(methyl-1,2-ethanediyl)] (9CI) (CA INDEX NAME)

KOROMA EIC1700

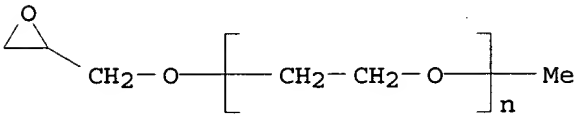
CM 1

CRN 52496-08-9
CMF (C3 H6 O)n C6 H6 O3
CCI IDS, PMS



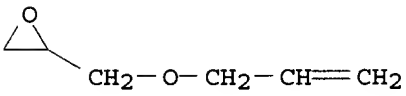
CM 2

CRN 40349-67-5
CMF (C2 H4 O)n C4 H8 O2
CCI PMS



CM 3

CRN 106-92-3
CMF C6 H10 O2



CM 4

CRN 75-21-8
CMF C2 H4 O

IC ICM H01M010-40

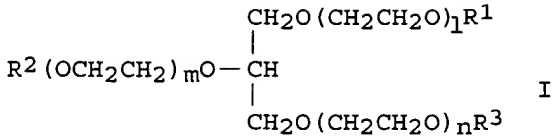
KOROMA EIC1700

ICS C08F290-14; C08F299-00; C08G065-04; C08K005-103; C08K005-3492; C08L071-02; H01B001-06; H01G009-038; H01G009-058; H01G009-035; H01M004-02; H01M006-18; H01M006-22
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
ST electrochem device electrolyte gel polymer compn
IT Battery electrolytes
(compns. of resins and polymer gel electrolytes for electrolyte-electrode laminates for secondary **lithium** batteries)
IT 96-48-0, .gamma.-Butyrolactone 96-49-1, Ethylene carbonate 108-32-7, Propylene carbonate 14283-07-9, **Lithium** fluoroborate 156219-03-3 **333970-93-7** 406727-26-2 **406727-27-3** **406727-28-4** 406727-29-5 **406727-30-8** 406727-31-9
RL: DEV (Device component use); USES (Uses)
(compns. of resins and polymer gel electrolytes for electrolyte-electrode laminates for secondary **lithium** batteries)

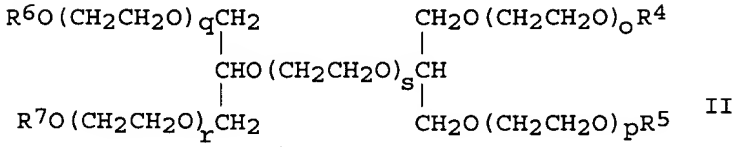
L48 ANSWER 14 OF 34 CAPLUS COPYRIGHT 2003 ACS
ACCESSION NUMBER: 2002:153093 CAPLUS
DOCUMENT NUMBER: 136:223262
TITLE: Gel electrolyte containing ether compounds for electrochemical device
INVENTOR(S): Tabuchi, Masato; Miura, Katsuto; Nakamura, Seiji; Wada, Yoshihiko
PATENT ASSIGNEE(S): Daiso Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 9 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2002063813	A2	20020228	JP 2000-250688	20000822

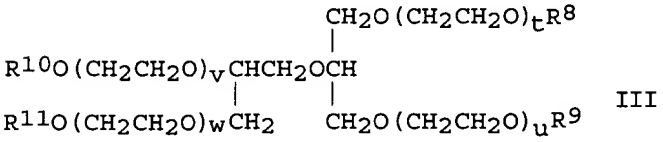
PRIORITY APPLN. INFO.: JP 2000-250688 20000822
OTHER SOURCE(S): MARPAT 136:223262
GI



I



II



III

AB The invention relates to a gel electrolyte contg. ether compds., suited for use in a **Li** battery, and a solar cell, thus the ether compds. are represented by I, II, and III [R1-11 = C1-6 alkyl and C2-6 alkenyl groups; R2 and R10 may be H; and l-w = 0-12 integers].

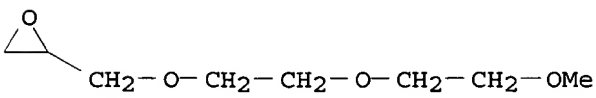
IT **115383-11-4**, Allyl glycidyl ether-diethylene glycol glycidyl methyl ether-ethylene oxide copolymer
RL: DEV (Device component use); USES (Uses)
(gel electrolyte contg. ether compds. for electrochem. device)

RN 115383-11-4 CAPLUS

CN Oxirane, [[2-(2-methoxyethoxy)ethoxy]methyl]-, polymer with oxirane and [(2-propenyloxy)methyl]oxirane (9CI) (CA INDEX NAME)

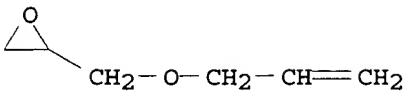
CM 1

CRN 71712-93-1
CMF C8 H16 O4



CM 2

CRN 106-92-3
CMF C6 H10 O2



CM 3

CRN 75-21-8
CMF C2 H4 O

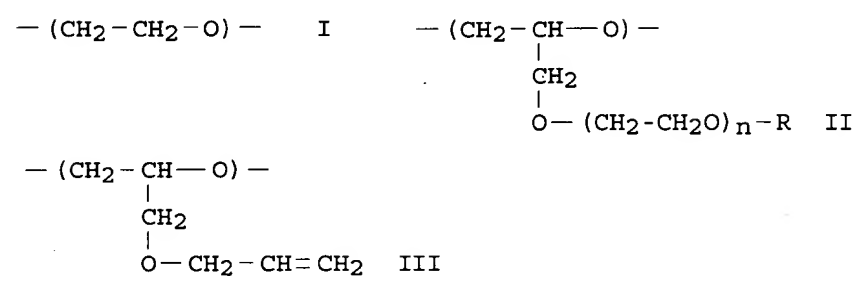
IC ICM H01B001-06
ICS H01L031-04; H01M006-18; H01M010-40; H01M014-00
CC 72-10 (Electrochemistry)
Section cross-reference(s): 52
ST gel electrolyte ether compd polyether **lithium** battery solar cell
IT Secondary batteries
(**Lithium**; gel electrolyte contg. ether compds. for electrochem. device)
IT Battery electrolytes
Solar cells
Solid electrolytes
(gel electrolyte contg. ether compds. for electrochem. device)
IT Polyethers, uses
RL: DEV (Device component use); USES (Uses)
(gel electrolyte contg. ether compds. for electrochem. device)
IT **115383-11-4**, Allyl glycidyl ether-diethylene glycol glycidyl methyl ether-ethylene oxide copolymer 292618-42-9 292618-43-0
RL: DEV (Device component use); USES (Uses)
(gel electrolyte contg. ether compds. for electrochem. device)

L48 ANSWER 15 OF 34 CAPLUS COPYRIGHT 2003 ACS
ACCESSION NUMBER: 2002:71739 CAPLUS
DOCUMENT NUMBER: 136:121123
TITLE: Polymer gel electrolyte and **lithium** battery using the electrolyte
INVENTOR(S): Roh, Hyung Gon
PATENT ASSIGNEE(S): Samsung Sdi Co., Ltd., S. Korea
SOURCE: Jpn. Kokai Tokkyo Koho, 9 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 2
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2002025622	A2	20020125	JP 2001-143495	20010514
CN 1332486	A	20020123	CN 2001-117957	20010429
US 2002018937	A1	20020214	US 2001-855838	20010516

PRIORITY APPLN. INFO.: KR 2000-34505 A 20000622

GI



AB The electrolyte is a mixt. contg. a terpolymer contg. repeating repeating units I, II (R = C1-12 alkyl group, n = 1-12 integer), and III and a **Li** salt, obtained by mixing solns. of the polymer and the **Li** salt and removing the low b.p. solvent of the polymer soln. The battery use the gel polymer electrolyte, where the terpolymer has I:II:III mol ratio (0.1-0.9):(0.1-0.8):(0.01-0.8).

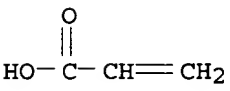
IT **391232-08-9**
RL: DEV (Device component use); USES (Uses)
(compns. of polymer gel electrolyte contg. oxyalkylene terpolymers for secondary **lithium** batteries)

RN 391232-08-9 CAPLUS

CN Oxirane, [[2-(2-methoxyethoxy)ethoxy]methyl]-, polymer with oxirane and [(2-propenyloxy)methyl]oxirane, di-2-propenoate (9CI) (CA INDEX NAME)

CM 1

CRN 79-10-7
CMF C3 H4 O2



CM 2

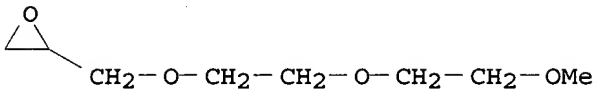
CRN 115383-11-4
CMF (C8 H16 O4 . C6 H10 O2 . C2 H4 O)x
CCI PMS

KOROMA EIC1700

Priority Documents

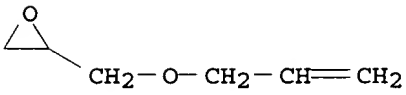
CM 3

CRN 71712-93-1
CMF C8 H16 O4



CM 4

CRN 106-92-3
CMF C6 H10 O2



CM 5

CRN 75-21-8
CMF C2 H4 O

IC H01M010-40; H01M006-18
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
ST **lithium** battery polymer gel electrolyte terpolymer compn; oxyalkylene terpolymer battery polymer gel electrolyte
IT Battery electrolytes
(compns. of polymer gel electrolyte contg. oxyalkylene terpolymers for secondary **lithium** batteries)
IT 96-49-1, Ethylene carbonate 108-32-7, Propylene carbonate 872-36-6, Vinylene carbonate 21324-40-3, **Lithium** hexafluorophosphate **391232-08-9**
RL: DEV (Device component use); USES (Uses)
(compns. of polymer gel electrolyte contg. oxyalkylene terpolymers for secondary **lithium** batteries)

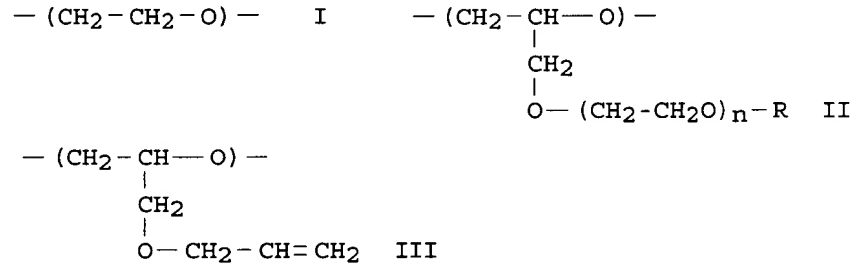
L48 ANSWER 16 OF 34 CAPLUS COPYRIGHT 2003 ACS
ACCESSION NUMBER: 2002:71738 CAPLUS
DOCUMENT NUMBER: 136:121122

TITLE: Polymer electrolyte and **lithium** battery using the electrolyte
INVENTOR(S): Roh, Hyung Gon
PATENT ASSIGNEE(S): Samsung Sdi Co., Ltd., S. Korea
SOURCE: Jpn. Kokai Tokkyo Koho, 11 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 2
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2002025621	A2	20020125	JP 2001-143494	20010514
CN 1341675	A	20020327	CN 2001-119708	20010516

PRIORITY APPLN. INFO.: KR 2000-26177 A 20000516
KR 2000-34505 A 20000622

GI



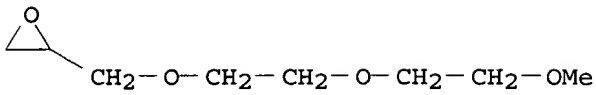
AB The electrolyte contains a hardened product of a terpolymer having repeating repeating units I, II (R = C1-12 alkyl group, n = 1-12 integer), and III; a **Li** salt, and an org. solvent. The electrolyte may also contain a plasticizer. The battery has an electrode stack and the polymer electrolyte in a battery case.

IT **115383-11-4**
RL: DEV (Device component use); USES (Uses)
(compns. of polymer electrolyte contg. hardened oxyalkylene terpolymers for secondary **lithium** batteries)

RN 115383-11-4 CAPLUS
CN Oxirane, [[2-(2-methoxyethoxy)ethoxy]methyl]-, polymer with oxirane and [(2-propenyloxy)methyl]oxirane (9CI) (CA INDEX NAME)

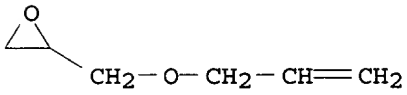
CM 1

CRN 71712-93-1
CMF C8 H16 O4



CM 2

CRN 106-92-3
CMF C6 H10 O2



CM 3

CRN 75-21-8
CMF C2 H4 O

IC H01M010-40; C08K005-00; C08K005-109; C08K005-14; C08K005-3412; C08L071-00; H01M006-18
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
ST **lithium** battery polymer electrolyte terpolymer compn; oxyalkylene crosslinked terpolymer battery polymer electrolyte
IT Battery electrolytes
(compns. of polymer electrolyte contg. hardened oxyalkylene terpolymers for secondary **lithium** batteries)
IT 96-49-1, Ethylene carbonate 105-58-8, Diethyl carbonate 108-32-7, Propylene carbonate 616-38-6, Dimethyl carbonate 872-36-6, Vinylene carbonate 21324-40-3, **Lithium** hexafluorophosphate **115383-11-4**
RL: DEV (Device component use); USES (Uses)
(compns. of polymer electrolyte contg. hardened oxyalkylene terpolymers for secondary **lithium** batteries)

L48 ANSWER 17 OF 34 CAPLUS COPYRIGHT 2003 ACS
ACCESSION NUMBER: 2001:840794 CAPLUS
DOCUMENT NUMBER: 135:374148
TITLE: Solid state polymer electrolyte **lithium** battery
INVENTOR(S): Kasumi, Eimo; Tatsumi, Kuniaki; Sakai, Tetsuo; Fujieda, Takuya; Muranaga, Toshio

PATENT ASSIGNEE(S): Ministry of Economy, Trade and Industry; National Industrial Research Institute, Japan; Daiso Co., Ltd.
SOURCE: Jpn. Kokai Tokkyo Koho, 7 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2001319692	A2	20011116	JP 2000-134854	20000508

PRIORITY APPLN. INFO.: JP 2000-134854 20000508

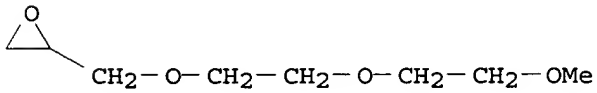
AB The battery has successively a cathode layer contg. cathode active mass particles and conductor particles dispersed in an electrolyte soln., of a **Li** salt dissolved in a polyoxyethylene having no. av. mo. wt. 400-20,000; a polymer electrolyte membrane contg. a **Li** salt dissolved in a copolymer having wt. av. mol. wt. 100,000-2,000,000, contg. ethylene oxide units 29-95, (CH2O)1-12 side chain contg. glycidyl ether units 4-70, and allyl glycidyl ether units 0.1-5 mol%; and an anode layer having a **Li** or **Li** alloy sheet on a metal collector.

IT **115383-11-4D**, crosslinked
RL: DEV (Device component use); USES (Uses)
(compns. of polymer electrolyte membranes for polymer electrolyte secondary **lithium** batteries)

RN 115383-11-4 CAPLUS
CN Oxirane, [[2-(2-methoxyethoxy)ethoxy]methyl]-, polymer with oxirane and [(2-propenyloxy)methyl]oxirane (9CI) (CA INDEX NAME)

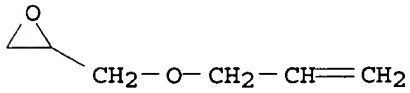
CM 1

CRN 71712-93-1
CMF C8 H16 O4



CM 2

CRN 106-92-3
CMF C6 H10 O2



CM 3

CRN 75-21-8
CMF C2 H4 O

IC ICM H01M010-40
ICS H01M004-02; H01M004-04; H01M004-58; H01M004-62
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
ST polymer electrolyte **lithium** battery; ethylene oxide copolymer electrolyte **lithium** battery; glycidyl ether copolymer electrolyte **lithium** battery
IT Battery cathodes
(cathodes contg. active mass dispersed in polymer electrolytes for secondary **lithium** batteries)
IT Battery electrolyses
(compns. of polymer electrolyte membranes for polymer electrolyte secondary **lithium** batteries)
IT Secondary batteries
(**lithium**; compns. of polymers for electrolyte and electrolytes in cathodes for secondary **lithium** batteries)
IT 9004-74-4, Poly(ethylene glycol) monomethyl ether 12057-17-9, **Lithium** manganese oxide (LiMn2O4) 12190-79-3, Cobalt **lithium** oxide (CoLiO2) 126941-24-0, **Lithium** manganese oxide (Li0.66Mn2O4)
RL: DEV (Device component use); USES (Uses)
(cathodes contg. active mass dispersed in polymer electrolytes for secondary **lithium** batteries)
IT 14283-07-9, **Lithium** fluoroborate 90076-65-6
115383-11-4D, crosslinked
RL: DEV (Device component use); USES (Uses)
(compns. of polymer electrolyte membranes for polymer electrolyte secondary **lithium** batteries)

L48 ANSWER 18 OF 34 CAPLUS COPYRIGHT 2003 ACS
ACCESSION NUMBER: 2001:498379 CAPLUS
DOCUMENT NUMBER: 135:291221
TITLE: Liquid-free rechargeable **Li** polymer battery
AUTHOR(S): Matsui, S.; Muranaga, T.; Higobashi, H.; Inoue, S.; Sakai, T.
CORPORATE SOURCE: DAISO Co., Ltd., Hyogo-ken, Amagasaki-shi, Otakasu-cho, 660-0842, Japan
SOURCE: Journal of Power Sources (2001), 97-98, 772-774
CODEN: JPSODZ; ISSN: 0378-7753
PUBLISHER: Elsevier Science S.A.
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Safety is a key concern for high-power energy storage systems, such as will be required for elec. vehicles. Present **lithium** ion batteries, which use a flammable org. liq. electrolyte, lack inherent safety. Our approach in solving this problem is to replace the liq. electrolyte with a liq.-free polymer electrolyte. Data of the compn. of the pos. electrode, charge-discharge and cycle-life capability are presented. The cell using metallic **lithium** anode and crosslinked polymer electrolyte P(EO/MEEGE/AGE)-LiTFSI showed a discharge capacity of 134 mAh g-1 of LiCoO2 at 60.degree.C and 140 mAh g-1 at 140.degree.C.

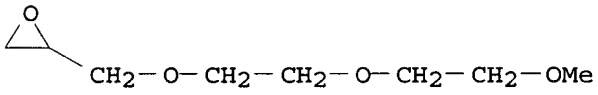
IT **115383-11-4**
RL: PEP (Physical, engineering or chemical process); PRP (Properties); PROC (Process)
(liq.-free rechargeable **Li** polymer battery)

RN 115383-11-4 CAPLUS

CN Oxirane, [[2-(2-methoxyethoxy)ethoxy]methyl]-, polymer with oxirane and [(2-propenyloxy)methyl]oxirane (9CI) (CA INDEX NAME)

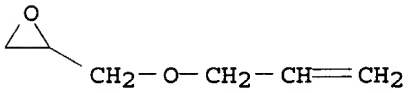
CM 1

CRN 71712-93-1
CMF C8 H16 O4



CM 2

CRN 106-92-3
CMF C6 H10 O2



CM 3

CRN 75-21-8
CMF C2 H4 O

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
ST **lithium** secondary batteries polymer electrolyte
IT Electric vehicles
Polymer electrolytes
(liq.-free rechargeable **Li** polymer battery)
IT Secondary batteries
(**lithium**; liq.-free rechargeable **Li** polymer battery)
IT **115383-11-4**
RL: PEP (Physical, engineering or chemical process); PRP (Properties); PROC (Process)
(liq.-free rechargeable **Li** polymer battery)
REFERENCE COUNT: 10 THERE ARE 10 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

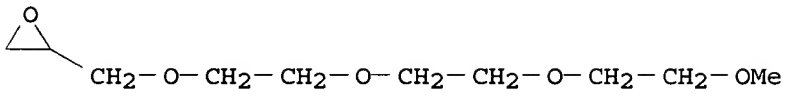
L48 ANSWER 19 OF 34 CAPLUS COPYRIGHT 2003 ACS
ACCESSION NUMBER: 2001:280607 CAPLUS
DOCUMENT NUMBER: 134:298393
TITLE: Electrode for electrochemical device and solid secondary **lithium** battery using it
INVENTOR(S): Matsui, Shohei; Miura, Katsuto; Higobashi, Hiroki; Sakai, Takaaki
PATENT ASSIGNEE(S): Daiso Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 5 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2001110403	A2	20010420	JP 1999-291775	19991014

PRIORITY APPLN. INFO.: JP 1999-291775 19991014
AB The electrode has porosity .ltoreq.20%, and the pores are filled with a solid ion-conductive polymer with ether linkages. The title battery having the electrode as a cathode and/or an anode is also claimed. The electrode has low elec. resistance and high ionic cond.
IT **333970-91-5**
RL: DEV (Device component use); PRP (Properties); USES (Uses)
(crosslinked; electrode having low porosity and contg. ion-conductive solid polyether for electrochem. device)
RN 333970-91-5 CAPLUS
CN Oxirane, [(2-propenyloxy)methyl]-, polymer with oxirane and 2,5,8,11-tetraoxadodec-1-yloxirane (9CI) (CA INDEX NAME)

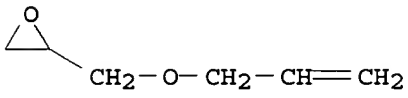
CM 1

CRN 73692-54-3
CMF C10 H20 O5



CM 2

CRN 106-92-3
CMF C6 H10 O2



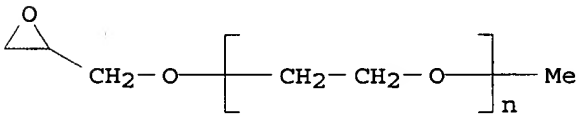
CM 3

CRN 75-21-8
CMF C2 H4 O

IT **333970-93-7**
RL: DEV (Device component use); PRP (Properties); USES (Uses)
(electrode having low porosity and contg. ion-conductive solid polyether for electrochem. device)
RN 333970-93-7 CAPLUS
CN Oxirane, [(2-propenyloxy)methyl]-, polymer with .alpha.-methyl-.omega.-(oxiranylmethoxy)poly(oxy-1,2-ethanediyl) and oxirane (9CI) (CA INDEX NAME)

CM 1

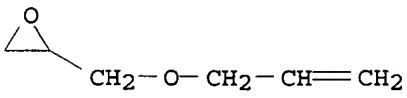
CRN 40349-67-5
CMF (C2 H4 O)n C4 H8 O2
CCI PMS



CM 2

KOROMA EIC1700

CRN 106-92-3
CMF C6 H10 O2



CM 3

CRN 75-21-8
CMF C2 H4 O

IC ICM H01M004-02
ICS C08L071-02; H01M010-40
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 38, 76
ST porosity electrode polymer electrolyte electrochem device; polyether solid electrolyte **lithium** battery electrode
IT Electric apparatus
(electrochem.; electrode having low porosity and contg. ion-conductive solid polyether for electrochem. device)
IT Battery electrodes
Battery electrolytes
Polymer electrolytes
(electrode having low porosity and contg. ion-conductive solid polyether for electrochem. device)
IT Polyoxyalkylenes, uses
RL: DEV (Device component use); PRP (Properties); USES (Uses)
(electrode having low porosity and contg. ion-conductive solid polyether for electrochem. device)
IT **333970-91-5**
RL: DEV (Device component use); PRP (Properties); USES (Uses)
(crosslinked; electrode having low porosity and contg. ion-conductive solid polyether for electrochem. device)
IT 25322-68-3, Ethylene oxide homopolymer **333970-93-7**
RL: DEV (Device component use); PRP (Properties); USES (Uses)
(electrode having low porosity and contg. ion-conductive solid polyether for electrochem. device)

L48 ANSWER 20 OF 34 CAPLUS COPYRIGHT 2003 ACS
ACCESSION NUMBER: 2001:15855 CAPLUS
DOCUMENT NUMBER: 134:165566
TITLE: Defect spinel Li8n/n+4Mn8/n+4O4 cathode materials for

solid-state **lithium**-polymer batteries

AUTHOR(S): Xia, Yongyao; Sakai, Tetsuo; Wang, Congxiao; Fujieda, Takuya; Tatsumi, Kuniaki; Takahashi, Koh; Mori, Atsushi; Yoshio, Masaki

CORPORATE SOURCE: Battery Section, Osaka National Research Institute, Osaka, 563-8577, Japan

SOURCE: Journal of the Electrochemical Society (2001), 148(1), A112-A119
CODEN: JESOAN; ISSN: 0013-4651

PUBLISHER: Electrochemical Society

DOCUMENT TYPE: Journal

LANGUAGE: English

AB We have used a self-reaction process, called the JMC (Japanese Metal and Chem. Co., Ltd.) method, to prep. a series of defect spinels Li8n/n+4Mn8/n+4O4, Li4Mn5O12-.delta. (n = 0.8), Li2Mn3O7-.delta. (n = 0.65), and Li2Mn4O9-.delta. (n = 0.5). We found that it is easy to oxidize a defect spinel with a higher **lithium** content (**Li**/Mn ratio of 0.8) during synthesis. At the same time, however, the defect spinel easily becomes oxygen deficient. By contrast, a defect spinel with a smaller **lithium** content, esp. **Li**/Mn of 0.5, is difficult to fully oxidize. The defect spinels deliver at initial capacity of 160 mAh/g both in the liq.-electrolyte and solid-state polymer-electrolyte-based cells. Li2Mn3O7-.delta. shows the best battery performance; the capacity loss rate is 0.18% per cycle for a **lithium**-polymer cell during the first 100 cycles at 65.degree., and the cell gives a specific energy of 360 Wh/kg based on the pure oxide. All compds. are thermally stable up to 200.degree. when they are in contact with polymer electrolytes, but undergo thermal runaway over 200.degree.. The exothermic reaction proceeds via a redox reaction among Mn4+, Mn3+, and the polymer electrolyte.

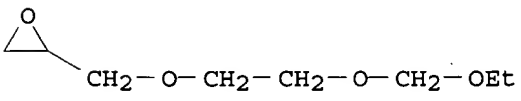
IT **325489-93-8D**, **lithium** complex, bis(trifluoromethyl sulfonyl)imide-contg.
RL: DEV (Device component use); USES (Uses)
(defect spinel Li8n/n+4Mn8/n+4O4 cathode materials for solid-state **lithium**-polymer batteries)

RN 325489-93-8 CAPLUS

CN Oxirane, [[2-(ethoxymethoxy)ethoxy]methyl]-, polymer with oxirane and [(2-propenyloxy)methyl]oxirane (9CI) (CA INDEX NAME)

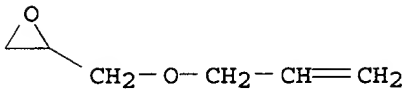
CM 1

CRN 19235-63-3
CMF C8 H16 O4



CM 2

CRN 106-92-3
CMF C6 H10 O2



CM 3

CRN 75-21-8
CMF C2 H4 O

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 38
ST battery cathode defect spinel **lithium** manganese oxide
IT Battery cathodes
Battery electrolytes
Polymer electrolytes
(defect spinel Li8n/n+4Mn8/n+4O4 cathode materials for solid-state **lithium**-polymer batteries)
IT 96-49-1, Ethylene carbonate 105-58-8, Diethyl carbonate 7439-93-2D, **Lithium**, complex with copolymer of ethylene oxide and glycidyl compd., bis(trifluoromethyl sulfonyl)imide-contg., uses 12031-92-4, **Lithium** manganese oxide Li4Mn5O12 21324-40-3, **Lithium** hexafluorophosphate 127575-11-5, **Lithium** manganese oxide Li2Mn4O9 **325489-93-8D**, **lithium** complex, bis(trifluoromethyl sulfonyl)imide-contg. 325489-94-9, **Lithium** manganese oxide (Li2Mn3O7)
RL: DEV (Device component use); USES (Uses)
(defect spinel Li8n/n+4Mn8/n+4O4 cathode materials for solid-state **lithium**-polymer batteries)
REFERENCE COUNT: 17 THERE ARE 17 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L48 ANSWER 21 OF 34 CAPLUS COPYRIGHT 2003 ACS
ACCESSION NUMBER: 2000:705210 CAPLUS
DOCUMENT NUMBER: 133:269455
TITLE: Solid electrolyte battery
INVENTOR(S): Yasuda, Toshikazu; Noda, Kazuhiro; Horie, Takeshi
PATENT ASSIGNEE(S): Sony Corp., Japan
SOURCE: Eur. Pat. Appl., 15 pp.
CODEN: EPXXDW
DOCUMENT TYPE: Patent

LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 1041657	A2	20001004	EP 2000-106323	20000323
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
JP 2000285929	A2	20001013	JP 1999-94149	19990331

PRIORITY APPLN. INFO.: JP 1999-94149 A 19990331

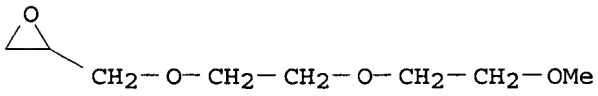
AB In a solid electrolyte battery incorporating a pos. electrode, a solid electrolyte layer formed on the pos. electrode, and a neg. electrode formed on the solid electrolyte layer, the solid electrolyte layer has a multi-layer structure having two or more layers, a solid electrolyte layer of the layers constituting the solid electrolyte layer having the multi-layer structure which is nearest the pos. electrode is constituted by a polymer having a glass transition point of -60.degree. or lower when measurement is performed by using a differential scanning calorimeter and a no. av. mol. wt. of 100,000 or larger, and at least one of the layers constituting the solid electrolyte layer having the multi-layer structure except for the layer nearest the pos. electrode is formed by crosslinking a polymer solid electrolyte having a functional group which can be crosslinked.

IT **115383-11-4**
RL: DEV (Device component use); USES (Uses)
(battery with solid electrolyte constituted by two or more layers)

RN 115383-11-4 CAPLUS
CN Oxirane, [[2-(2-methoxyethoxy)ethoxy]methyl]-, polymer with oxirane and [(2-propenyloxy)methyl]oxirane (9CI) (CA INDEX NAME)

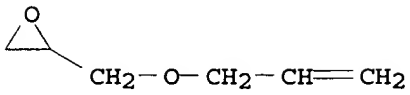
CM 1

CRN 71712-93-1
CMF C8 H16 O4



CM 2

CRN 106-92-3
CMF C6 H10 O2



CM 3

CRN 75-21-8
CMF C2 H4 O

IC ICM H01M010-40
ICS C08G079-02
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 38
ST battery solid electrolyte
IT Battery electrolytes
Polymer electrolytes
Secondary batteries
(battery with solid electrolyte constituted by two or more layers)
IT Fluoropolymers, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(binder; battery with solid electrolyte constituted by two or more layers)
IT 7439-93-2, **Lithium**, uses 12190-79-3, Cobalt **lithium** oxide colio2 14283-07-9, **Lithium** tetrafluoroborate 26085-02-9D, Poly[nitrilo(dichlorophosphoranylidyne)], ethoxylated **115383-11-4** 115401-75-7
RL: DEV (Device component use); USES (Uses)
(battery with solid electrolyte constituted by two or more layers)
IT 7782-42-5, Graphite, uses
RL: MOA (Modifier or additive use); USES (Uses)
(battery with solid electrolyte constituted by two or more layers)
IT 24937-79-9, Pvdf
RL: TEM (Technical or engineered material use); USES (Uses)
(binder; battery with solid electrolyte constituted by two or more layers)
IT 7429-90-5, Aluminum, uses 7440-50-8, Copper, uses
RL: DEV (Device component use); USES (Uses)
(current collector; battery with solid electrolyte constituted by two or more layers)

L48 ANSWER 22 OF 34 CAPLUS COPYRIGHT 2003 ACS
ACCESSION NUMBER: 2000:362809 CAPLUS
DOCUMENT NUMBER: 132:350269
TITLE: Photoelectrochemical cells with solid polymer

electrolytes

INVENTOR(S): Sakai, Takaaki; Matsui, Shohei; Miura, Katsuto; Higobashi, Hiroki

PATENT ASSIGNEE(S): Daiso Co., Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 13 pp.
CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2000150006	A2	20000530	JP 1998-315925	19981106

PRIORITY APPLN. INFO.: JP 1998-315925 19981106

GI

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

AB The photoelectrochem. cells use an electrolyte contg. a Br-Br- or I-I- redox pair and a crosslinked polyether copolymer having wt. av. mol. wt 104-7 and contg. 5-95 mol% I (R1-3 = H or CH2O(CH2CH2O)nR; n = 1-12 and may be different in the R1, R2, and R3; not all R1, R2, and R3 = H; R = C1-12 alkyl, C2-8 alkenyl, C3-8 cycloalkyl, C6-14 aryl, or C7-12 aralkyl group), 5-95 mol% ethylene oxide, and 0-15 mol% II (R4 = ethylenic unsatd. group, reactive Si contg. group, epoxy contg. group, or halogen contg. group) or III.

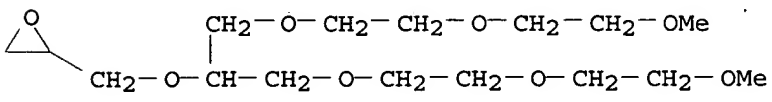
IT **252343-44-5**
RL: DEV (Device component use); USES (Uses)
(solid electrolytes contg. crosslinked polyether copolymers for photoelectrochem. cells)

RN 252343-44-5 CAPLUS

CN Oxirane, [3-[[2-(2-methoxyethoxy)ethoxy]methyl]-2,5,8,11-tetraoxadodec-1-yl]-, polymer with oxirane and [(2-propenyloxy)methyl]oxirane (9CI) (CA INDEX NAME)

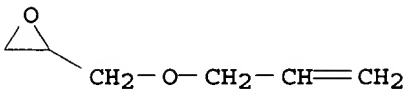
CM 1

CRN 209163-45-1
CMF C16 H32 O8



CM 2

CRN 106-92-3
CMF C6 H10 O2



CM 3

CRN 75-21-8
CMF C2 H4 O

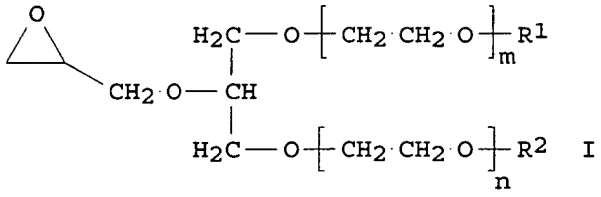
IC ICM H01M014-00
ICS H01L031-04
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
ST photoelectrochem cell polyether solid electrolyte; iodine iodide polyether electrolyte photoelectrochem cell; bromine bromide polyether electrolyte photoelectrochem cell
IT Electrolytes
Photoelectrochemical cells
(solid electrolytes contg. crosslinked polyether copolymers for photoelectrochem. cells)
IT 7553-56-2, Iodine, uses 7726-95-6, Bromine, uses 10377-51-2, **Lithium** iodide 24959-67-9, Bromide, uses 209163-50-8 **252343-44-5** 269400-05-7
RL: DEV (Device component use); USES (Uses)
(solid electrolytes contg. crosslinked polyether copolymers for photoelectrochem. cells)

L48 ANSWER 23 OF 34 CAPLUS COPYRIGHT 2003 ACS
ACCESSION NUMBER: 1999:789856 CAPLUS
DOCUMENT NUMBER: 132:38113
TITLE: Polymer electrolyte **lithium** batteries
INVENTOR(S): Higobashi, Hiroki; Miura, Katsuto; Yanaida, Masanori; Endo, Takahiro
PATENT ASSIGNEE(S): Daiso Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 16 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 11345628	A2	19991214	JP 1998-154430	19980603

PRIORITY APPLN. INFO.: JP 1998-154430 19980603

GI



I

AB The batteries use polymer electrolytes contg. an electrolyte salt and a (crosslinked) polyether copolymer, which contains I (R1 and R2 = C1-12 alkyl, C2-8 alkenyl, C3-8 cycloalkyl, C6-14 aryl, C7-12aralkyl, or tetrahydro pyranyl groups; m and n = 1-12) 0.5-99, ethylene oxide 1-99.5, and a monomer having .gtoreq.1 epoxy groups and .gtoreq.1 reactive functional groups 0-15 mol% and has wt. av. mol. wt. 103-107.

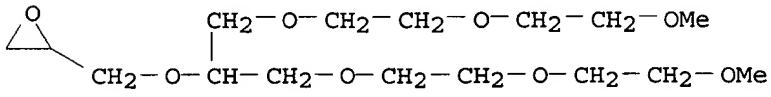
IT **252343-44-5**
RL: DEV (Device component use); USES (Uses)
(electrolytes contg. polyester copolymers for secondary **lithium** batteries)

RN 252343-44-5 CAPLUS

CN Oxirane, [3-[[2-(2-methoxyethoxy)ethoxy]methyl]-2,5,8,11-tetraoxadodec-1-yl]-, polymer with oxirane and [(2-propenyloxy)methyl]oxirane (9CI) (CA INDEX NAME)

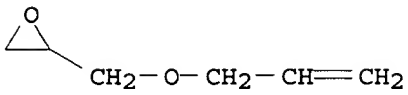
CM 1

CRN 209163-45-1
CMF C16 H32 O8



CM 2

CRN 106-92-3
CMF C6 H10 O2



CM 3

CRN 75-21-8
CMF C2 H4 O

IC ICM H01M010-40
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
ST **lithium** battery polyether electrolyte
IT Carbonaceous materials (technological products)
RL: DEV (Device component use); USES (Uses)
(electrodes for secondary **lithium** batteries with electrolytes contg. polyester copolymers)
IT Battery electrolytes
(electrolytes contg. polyester copolymers for secondary **lithium** batteries)
IT 1314-62-1, Vanadium pentoxide, uses 7439-93-2, **Lithium**, uses 7782-42-5, Graphite, uses 12039-13-3, Titanium disulfide 12057-17-9, **Lithium** manganese oxide (LiMn2O4) 12190-79-3, Cobalt **lithium** oxide (CoLiO2) 116327-69-6, Cobalt **lithium** nickel oxide (Co0.1LiNi0.9O2)
RL: DEV (Device component use); USES (Uses)
(electrodes for secondary **lithium** batteries with electrolytes contg. polyester copolymers)
IT 14283-07-9, **Lithium** fluoroborate **252343-44-5**
RL: DEV (Device component use); USES (Uses)
(electrolytes contg. polyester copolymers for secondary **lithium** batteries)

L48 ANSWER 24 OF 34 CAPLUS COPYRIGHT 2003 ACS
ACCESSION NUMBER: 1999:189073 CAPLUS
DOCUMENT NUMBER: 130:211736
TITLE: Polymer electrolyte **lithium** batteries
INVENTOR(S): Muranaga, Toshio; Higobashi, Hiroki; Miura, Katsuto
PATENT ASSIGNEE(S): Daiso Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 15 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 11073992	A2	19990316	JP 1998-85890	19980331

PRIORITY APPLN. INFO.: JP 1997-179503 19970704

AB The batteries use polymer electrolyte membranes contg. an electrolyte salt and a polymer comprising glycidyl ether units, having (C2H4O)1-12 side chains, 1-98, ethylene oxide units 1-95, and oxirane units contg. crosslinking functional groups 0.005-15 mol%.

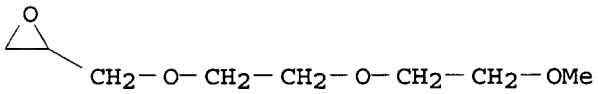
IT **115383-11-4**
RL: DEV (Device component use); USES (Uses)
(crosslinked; compns. of polymer electrolytes for secondary **lithium** batteries)

RN 115383-11-4 CAPLUS

CN Oxirane, [[2-(2-methoxyethoxy)ethoxy]methyl]-, polymer with oxirane and [(2-propenyloxy)methyl]oxirane (9CI) (CA INDEX NAME)

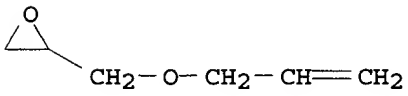
CM 1

CRN 71712-93-1
CMF C8 H16 O4



CM 2

CRN 106-92-3
CMF C6 H10 O2



CM 3

CRN 75-21-8
CMF C2 H4 O

IC ICM H01M010-40

KOROMA EIC1700

ICS H01M010-40; H01M004-02; H01M004-38; H01M004-48; H01M004-58
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
ST **lithium** battery polymer electrolyte compn
IT Battery electrolytes
(compns. of polymer electrolytes for secondary **lithium** batteries)
IT 14283-07-9, **Lithium** fluoroborate
RL: DEV (Device component use); USES (Uses)
(compns. of polymer electrolytes for secondary **lithium** batteries)
IT **115383-11-4**
RL: DEV (Device component use); USES (Uses)
(crosslinked; compns. of polymer electrolytes for secondary **lithium** batteries)

L48 ANSWER 25 OF 34 CAPLUS COPYRIGHT 2003 ACS
ACCESSION NUMBER: 1998:406008 CAPLUS
DOCUMENT NUMBER: 129:82389
TITLE: Copolyethers and solid polymer electrolytes and secondary batteries
INVENTOR(S): Watanabe, Masayoshi; Miura, Katsuhito; Yanagida, Masanori; Higobashi, Hiroki; Endo, Takahiro
PATENT ASSIGNEE(S): Daiso Co., Ltd., Japan; Watanabe, Masayoshi; Miura, Katsuhito; Yanagida, Masanori; Higobashi, Hiroki; Endo, Takahiro
SOURCE: PCT Int. Appl., 76 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9825990	A1	19980618	WO 1997-JP4499	19971208
W: CA, CN, JP, KR, US				
RW: AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
CA 2244904	AA	19980618	CA 1997-2244904	19971208
EP 885913	A1	19981223	EP 1997-946152	19971208
EP 885913	B1	20030416		
R: DE, FR, GB, IT				
CN 1210548	A	19990310	CN 1997-192119	19971208
CN 1094494	B	20021120		
TW 444044	B	20010701	TW 1997-86118417	19971208
JP 3223978	B2	20011029	JP 1998-526483	19971208
US 6180287	B1	20010130	US 1998-101971	19980730

PRIORITY APPLN. INFO.: JP 1996-328422 A 19961209
JP 1996-345244 A 19961225
WO 1997-JP4499 W 19971208

AB Solid polymer electrolytes prepd. by blending (1) copolyether comprising a main chain derived from ethylene oxide mols. and a side chain having two oligooxyethylene groups with (2) an electrolytic salt and, if necessary,

(3) a plasticizer selected from aprotic org. solvents, derivs. and metal salts of polyalkylene glycols having Mn 200-5000, and metal salts of the derivs. are superior to the solid electrolytes of the prior art in ionic cond. and excellent in processability, moldability and mech. strengths. Secondary batteries can be produced by combining the solid polymer electrolytes with a neg. electrode of metallic **lithium** and a pos. electrode of cobalt **lithium**. 2-Glycidoxy-1,3-bis(2-methoxyethoxy)propane and ethylene oxide were copolymd. and cast together with LiClO4 to give a film with elec. cond. 8.7 x 10-4 S/cm.

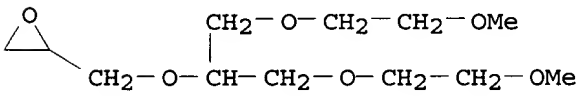
IT **209163-54-2P 209163-55-3P 209163-58-6P**
209163-60-0P
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(copolyethers and solid polymer electrolytes and secondary batteries)

RN 209163-54-2 CAPLUS

CN Oxirane, [[2-(2-methoxyethoxy)-1-[(2-methoxyethoxy)methyl]ethoxy]methyl]-, polymer with oxirane and [(2-propenyloxy)methyl]oxirane (9CI) (CA INDEX NAME)

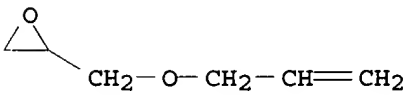
CM 1

CRN 206443-30-3
CMF C12 H24 O6



CM 2

CRN 106-92-3
CMF C6 H10 O2



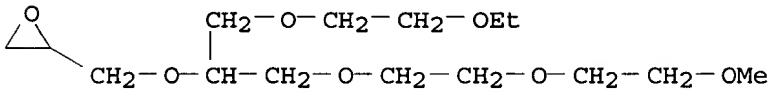
CM 3

CRN 75-21-8
CMF C2 H4 O

RN 209163-55-3 CAPLUS
CN Oxirane, [3-[(2-ethoxyethoxy)methyl]-2,5,8,11-tetraoxadodec-1-yl]-, polymer with oxirane and [(2-propenyloxy)methyl]oxirane (9CI) (CA INDEX NAME)

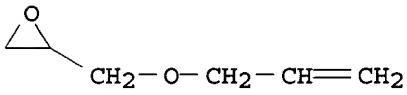
CM 1

CRN 209163-44-0
CMF C15 H30 O7



CM 2

CRN 106-92-3
CMF C6 H10 O2



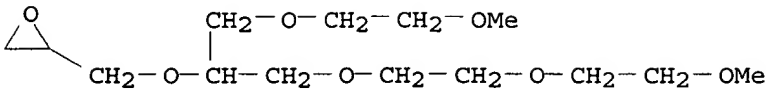
CM 3

CRN 75-21-8
CMF C2 H4 O

RN 209163-58-6 CAPLUS
CN Oxirane, [3-[(2-methoxyethoxy)methyl]-2,5,8,11-tetraoxadodec-1-yl]-, polymer with oxirane and [(2-propenyloxy)methyl]oxirane (9CI) (CA INDEX NAME)

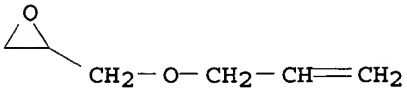
CM 1

CRN 209163-47-3
CMF C14 H28 O7



CM 2

CRN 106-92-3
CMF C6 H10 O2



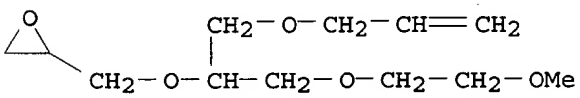
CM 3

CRN 75-21-8
CMF C2 H4 O

RN 209163-60-0 CAPLUS
CN Oxirane, [[1-[(2-methoxyethoxy)methyl]-2-(2-propenyloxy)ethoxy]methyl]-, polymer with oxirane and [(2-propenyloxy)methyl]oxirane (9CI) (CA INDEX NAME)

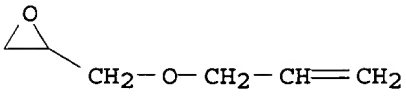
CM 1

CRN 209163-59-7
CMF C12 H22 O5



CM 2

CRN 106-92-3
CMF C6 H10 O2



CM 3

CRN 75-21-8
CMF C2 H4 O

IC ICM C08G065-22
ICS C08G065-08; C08G077-46; C08G059-22; C08F299-02; C08L071-02; C08L083-12; C08L063-00; C08K003-24; C08K005-42; H01M006-18; H01M010-40; H01G009-025
CC 37-6 (Plastics Manufacture and Processing)
ST polyether solid electrolyte secondary battery
IT Plasticizers
Secondary batteries
Solid electrolytes
(copolyethers and solid polymer electrolytes and secondary batteries)
IT Polyethers, preparation
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(copolyethers and solid polymer electrolytes and secondary batteries)
IT Polyoxyalkylenes, uses
RL: NUU (Other use, unclassified); USES (Uses)
(copolyethers and solid polymer electrolytes and secondary batteries)
IT Polysiloxanes, uses
RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
(copolyethers and solid polymer electrolytes and secondary batteries)
IT Glycols, uses
RL: NUU (Other use, unclassified); USES (Uses)
(ethers; copolyethers and solid polymer electrolytes and secondary batteries)
IT Ethers, uses
RL: NUU (Other use, unclassified); USES (Uses)
(glycol; copolyethers and solid polymer electrolytes and secondary batteries)
IT Polyoxyalkylenes, uses
RL: NUU (Other use, unclassified); USES (Uses)
(**lithium** and dioctylaluminum complexes; copolyethers and solid polymer electrolytes and secondary batteries)
IT 126-73-8DP, Tributyl phosphate, reaction products with tributyltin chloride 1461-22-9DP, Tributyltin chloride, reaction products with tri-Bu phosphate

RL: CAT (Catalyst use); IMF (Industrial manufacture); PREP (Preparation); USES (Uses)
(copolyethers and solid polymer electrolytes and secondary batteries)

IT 130670-52-9P, 2,5,9,12-Tetraoxatridecan-7-ol 206443-30-3P 209163-44-0P 209163-45-1P 209163-46-2P 209163-47-3P 209163-48-4P 209163-49-5P 209163-50-8P 209163-51-9P 209163-52-0P 209163-53-1P
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)
(copolyethers and solid polymer electrolytes and secondary batteries)

IT 206443-31-4P **209163-54-2P** **209163-55-3P** 209163-56-4P 209163-57-5P **209163-58-6P** **209163-60-0P** 209163-61-1P 209163-63-3P 209163-64-4P 209163-65-5P 209163-66-6P 209163-67-7P
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(copolyethers and solid polymer electrolytes and secondary batteries)

IT 96-48-0, .gamma.-Butyrolactone 108-32-7 112-49-2, Triethylene glycol dimethyl ether 143-24-8, Tetraethylene glycol dimethyl ether 4353-28-0, Tetraethylene glycol diethyl ether 4437-85-8, Butylene carbonate 4499-99-4, Triethylene glycol diethyl ether 7429-90-5D, Aluminum, polyoxyalkylene complexes, uses 7439-93-2D, **Lithium**, polyoxyalkylene complexes, uses 7791-03-9, **Lithium** perchlorate 9004-74-4D, **lithium** and dioctylaluminum complexes 19836-78-3 24650-42-8 24991-55-7, Polyethylene glycol dimethyl ether 25322-68-3 25322-68-3D, **lithium** and dioctylaluminum complexes 25322-69-4 25852-47-5 26570-48-9 27274-31-3D, Polyethylene glycol monoallyl ether, **lithium** and dioctylaluminum complexes 53609-62-4, Polyethylene glycol diethyl ether 59788-01-1, Polyethylene glycol diallyl ether
RL: NUU (Other use, unclassified); USES (Uses)
(copolyethers and solid polymer electrolytes and secondary batteries)

IT 31900-57-9D, Dimethylsilanediol homopolymer, trimethylsilyl-terminated 42557-10-8, Polyoxydimethylsilylene,trimethylsilyl-terminated 156118-35-3D, Dimethylsilanediol-methylsilanediol copolymer, trimethylsilyl-terminated
RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
(copolyethers and solid polymer electrolytes and secondary batteries)

IT 106-89-8, reactions 109-86-4, Ethylene glycol monomethyl ether 111-77-3, Diethylene glycol monomethyl ether 13483-49-3, Ethylene glycol glycidyl methyl ether 71712-93-1, Diethylene glycol glycidyl methyl ether 73692-54-3, Triethylene glycol glycidyl methyl ether
RL: RCT (Reactant); RACT (Reactant or reagent)
(copolyethers and solid polymer electrolytes and secondary batteries)

REFERENCE COUNT: 13 THERE ARE 13 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

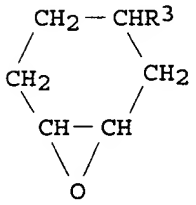
L48 ANSWER 26 OF 34 CAPLUS COPYRIGHT 2003 ACS
ACCESSION NUMBER: 1998:277540 CAPLUS
DOCUMENT NUMBER: 129:16529
TITLE: Polyether copolymer, and polymer solid electrolyte composition for use in batteries
INVENTOR(S): Miura, Katsuhito; Yanagida, Masanori; Higobashi,

Hiroki; Endo, Takahiro
PATENT ASSIGNEE(S): Daiso Co., Ltd., Japan
SOURCE: Eur. Pat. Appl., 35 pp.
CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 838487	A2	19980429	EP 1997-118729	19971028
EP 838487	A3	19980722		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
JP 10130487	A2	19980519	JP 1996-285047	19961028
JP 10176105	A2	19980630	JP 1996-336783	19961217
US 5968681	A	19991019	US 1997-958664	19971028
JP 10204172	A2	19980804	JP 1997-308562	19971111
JP 3282565	B2	20020513		

PRIORITY APPLN. INFO.: JP 1996-285047 A 19961028
JP 1996-312228 A 19961122
JP 1996-336783 A 19961217

GI



I

AB A polyether prepd. from 5-95 mol% QO(CHMeCH2O)nR1 (R = C1-12-alkyl, alkenyl of 2-8 C atoms, cycloalkyl, aryl, aralkyl, and tetrahydropyranyl; n = 1-12; Q = glycidyl), 5-95 mol% oxirane, and 0-15 mol% R2J (J = oxiranyl; R2 = substituent having ethylenically unsatd. group, or one having reactive Si or halogen group, having epoxy group at the terminal end) or I (R3 = R2) as a crosslinking component has a wt.-av. mol. wt. (Mw) 103-107 and is blended with plasticizer and an electrolyte salt. The copolymer provides a polymer solid electrolyte superior in ionic cond. and also superior in processability, moldability, mech. strength and flexibility. Thus, the copolymer (83:17) of ethyene oxide and dipropylene glycol glycidyl Me ether having a wt.-av. mol. wt. 2,400,000 and cond. (35.degree.) 4.6 .times. 10-5 S/cm was mixed with acetonitrile soln. of **Li** bistrifluoromethane sulfonylimide, cast as a film, and dried, and placed between a foil and **Li** cobaltate plate to form a secondary battery electrode.

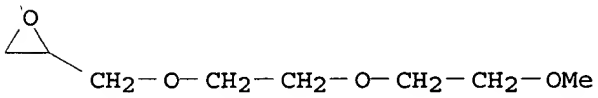
IT **206667-43-8DP**, **lithium** complexes **206667-46-1DP**

, **lithium** complexes **206667-47-2DP**, **lithium** complexes **206667-52-9DP**, **lithium** complexes
RL: IMF (Industrial manufacture); POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(polyether complex compn. for use in batteries)

RN 206667-43-8 CAPLUS
CN Oxirane, [[2-(2-methoxymethylethoxy)methylethoxy]methyl]-, polymer with oxirane and [(2-propenyloxy)methyl]oxirane (9CI) (CA INDEX NAME)

CM 1

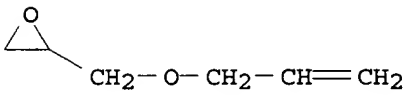
CRN 206543-22-8
CMF C10 H20 O4
CCI IDS



2 (D1—Me)

CM 2

CRN 106-92-3
CMF C6 H10 O2



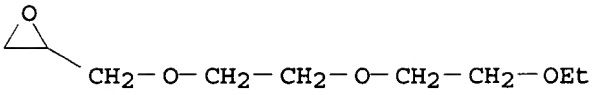
CM 3

CRN 75-21-8
CMF C2 H4 O

RN 206667-46-1 CAPLUS
CN Oxirane, [[2-(2-ethoxymethylethoxy)methylethoxy]methyl]-, polymer with oxirane and [(2-propenyloxy)methyl]oxirane (9CI) (CA INDEX NAME)

CM 1

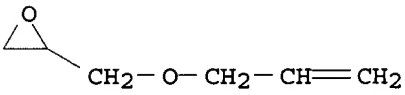
CRN 206543-18-2
CMF C11 H22 O4
CCI IDS



2 (D1—Me)

CM 2

CRN 106-92-3
CMF C6 H10 O2



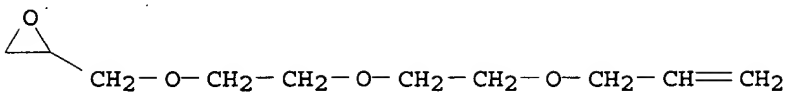
CM 3

CRN 75-21-8
CMF C2 H4 O

RN 206667-47-2 CAPLUS
CN Oxirane, [[methyl-2-[methyl-2-(2-propenyloxy)ethoxy]ethoxy]methyl]-, polymer with oxirane and [(2-propenyloxy)methyl]oxirane (9CI) (CA INDEX NAME)

CM 1

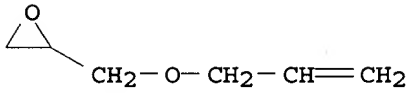
CRN 105390-32-7
CMF C12 H22 O4
CCI IDS



2 (D1—Me)

CM 2

CRN 106-92-3
CMF C6 H10 O2



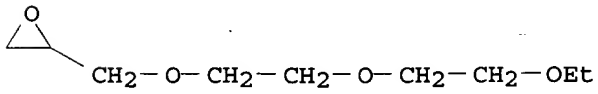
CM 3

CRN 75-21-8
CMF C2 H4 O

RN 206667-52-9 CAPLUS
CN Silanediol, dimethyl-, polymer with [[2-(2-ethoxymethylethoxy)methylethoxy]methyl]oxirane, methylsilanediol, oxirane and [(2-propenyloxy)methyl]oxirane, block (9CI) (CA INDEX NAME)

CM 1

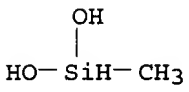
CRN 206543-18-2
CMF C11 H22 O4
CCI IDS



2 (D1—Me)

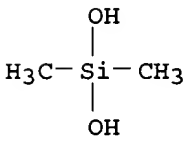
CM 2

CRN 43641-90-3
CMF C H6 O2 Si



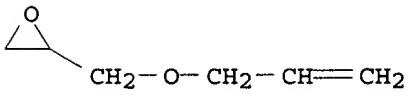
CM 3

CRN 1066-42-8
CMF C2 H8 O2 Si



CM 4

CRN 106-92-3
CMF C6 H10 O2



CM 5

CRN 75-21-8
CMF C2 H4 O

IT **206667-58-5D, lithium** complexes
RL: TEM (Technical or engineered material use); USES (Uses)

KOROMA EIC1700

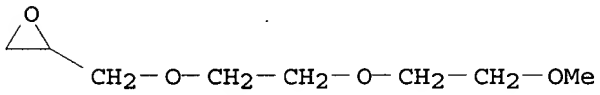
(polyether complex compn. for use in batteries)

RN 206667-58-5 CAPLUS

CN 1H-Pyrrole-2,5-dione, 1,1'-(1,3-phenylene)bis-, polymer with [[2-(2-methoxymethylethoxy)methylethoxy]methyl]oxirane, oxirane and [(2-propenyloxy)methyl]oxirane (9CI) (CA INDEX NAME)

CM 1

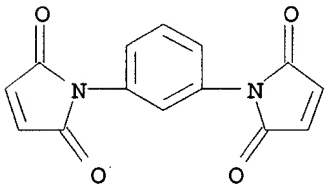
CRN 206543-22-8
CMF C10 H20 O4
CCI IDS



2 (D1—Me)

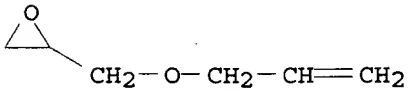
CM 2

CRN 3006-93-7
CMF C14 H8 N2 O4



CM 3

CRN 106-92-3
CMF C6 H10 O2



CM 4

CRN 75-21-8
CMF C2 H4 O

IC ICM C08G065-08
ICS C08G065-14; C08K003-00; H01M006-18; H01B001-12
CC 35-7 (Chemistry of Synthetic High Polymers)
Section cross-reference(s): 72
ST solid electrolyte polyether battery secondary; salt polyether solid electrolyte; plasticizer polyether solid electrolyte; solvent plasticizer polyether; polyoxyalkylene salt plasticizer polyether; crosslinked polyether solid electrolyte
IT Polyoxyalkylenes, preparation
RL: IMF (Industrial manufacture); POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(**lithium** complexes; polyether copolymer manuf. and compn. for use in batteries)
IT Ionic conductivity
(of polyether complex compn. for use in batteries)
IT Battery electrolytes
(polyether complex compn. for use in batteries)
IT Secondary batteries
(polyether copolymer manuf. and compn. for use in)
IT Solid electrolytes
(polyether copolymer manuf. and compn. for use in batteries)
IT Plasticizers
(solid electrolyte compn.; polyether complex compn. for use in batteries)
IT 7791-03-9, **Lithium** perchlorate 90076-65-6, **Lithium** bistrifluoromethane sulfonylimide
RL: TEM (Technical or engineered material use); USES (Uses)
(electrolyte; polyether complex compn. for use in batteries)
IT 9004-74-4D, Polyethylene glycol monomethyl ether, octylaluminum complexes 24991-55-7, Polyethylene glycol dimethyl ether 25852-47-5, Polyethylene glycol dimethacrylate 26570-48-9, Polyethylene glycol diacrylate 27274-31-3D, Polyethylene glycol monoallyl ether, octylaluminum complexes 27879-07-8D, Polyethylene glycol monoethyl ether, octylaluminum complexes 31494-81-2, Polyethylene glycol monomethyl ether sodium salt 53609-62-4, Polyethylene glycol diethyl ether 59788-01-1, Polyethylene glycol diallyl ether 91848-80-5 153815-02-2 157433-30-2 203863-94-9 206565-75-5 206565-76-6
RL: TEM (Technical or engineered material use); USES (Uses)
(plasticizer; polyether complex compn. for use in batteries)
IT 206543-19-3DP, **lithium** complexes 206543-23-9DP, **lithium** complexes 206543-69-3DP, **lithium** complexes 206667-42-7DP, Dipropylene glycol glycidyl allyl ether-ethylene oxide copolymer, **lithium** complexes **206667-43-8DP**,

lithium complexes 206667-44-9DP, **lithium** complexes 206667-45-0DP, **lithium** complexes **206667-46-1DP**, **lithium** complexes **206667-47-2DP**, **lithium** complexes 206667-48-3DP, **lithium** complexes 206667-49-4DP, **lithium** complexes 206667-50-7DP, **lithium** complexes 206667-51-8DP, **lithium** complexes **206667-52-9DP**, **lithium** complexes 206667-53-0DP, **lithium** complexes 206667-54-1DP, **lithium** complexes 206667-55-2DP, **lithium** complexes 206667-56-3DP, **lithium** complexes 207301-79-9DP, **lithium** complexes
RL: IMF (Industrial manufacture); POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(polyether complex compn. for use in batteries)

IT 206543-22-8P
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)
(polyether complex compn. for use in batteries)

IT 106-89-8, Epichlorohydrin, reactions 34590-94-8, Dipropylene glycol monomethyl ether
RL: RCT (Reactant); RACT (Reactant or reagent)
(polyether complex compn. for use in batteries)

IT 206667-57-4D, **lithium** complexes **206667-58-5D**, **lithium** complexes
RL: TEM (Technical or engineered material use); USES (Uses)
(polyether complex compn. for use in batteries)

IT 96-48-0, .gamma.-Butyrolactone 108-32-7, Propylene carbonate 109-99-9, Tetrahydrofuran, uses 112-49-2, Triethylene glycol dimethyl ether 143-24-8, Tetraethylene glycol dimethyl ether 4353-28-0, Tetraethylene glycol diethyl ether 4437-85-8, Butylene carbonate 4499-99-4, Triethylene glycol diethyl ether 19836-78-3
RL: TEM (Technical or engineered material use); USES (Uses)
(solvent for solid electrolyte; polyether complex compn. for use in batteries)

L48 ANSWER 27 OF 34 CAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 1998:147370 CAPLUS
DOCUMENT NUMBER: 128:205658
TITLE: Solid electrolytes derived from branched polyoxyethylene polymers
INVENTOR(S): Miura, Katsuhito; Shoji, Shigeru; Sakashita, Takahiro; Matoba, Yasuo
PATENT ASSIGNEE(S): Daiso Co., Ltd., Japan; Miura, Katsuhito; Shoji, Shigeru; Sakashita, Takahiro; Matoba, Yasuo
SOURCE: PCT Int. Appl., 61 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE

WO 9807772		A1	19980226	WO 1997-JP2854	19970819
	W:	AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, HU, IL, IS, JP, KE, KG, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
	RW:	GH, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG				
CA 2235166		AA	19980226	CA 1997-2235166	19970819
AU 9738657		A1	19980306	AU 1997-38657	19970819
EP 856538		A1	19980805	EP 1997-935805	19970819
EP 856538		B1	20021120		
	R:	CH, DE, ES, FR, GB, IT, LI, NL			
CN 1199408		A	19981118	CN 1997-191109	19970819
CN 1096481		B	20021218		
BR 9706631		A	19991123	BR 1997-6631	19970819
TW 446731		B	20010721	TW 1997-86111865	19970819
JP 3215440		B2	20011009	JP 1998-510574	19970819
US 6162563		A	20001219	US 1999-51776	19990311
US 2002012849		A1	20020131	US 2000-739241	20001219

PRIORITY APPLN. INFO.:	JP 1996-218575	A	19960820
	JP 1996-249358	A	19960920
	WO 1997-JP2854	W	19970819
	US 1999-51776	A1	19990311

AB The solid electrolytes having high ion cond., moldability and mech. strengths are prepd. by mixing (1) a polyether copolymer having a backbone derived from ethylene oxide and a side chain of oligo-oxyethylene, (2) an electrolyte salt compd., and (3) an aprotic org. solvent, or a plasticizer consisting of a deriv. or a metal salt of a polyalkylene glycol having a no.-av. mol. wt. of 200-5000 or a metal salt of the deriv. The electrolytes are useful for making rechargeable secondary batteries contg. an anode of a **lithium** metal and a cathode of **lithium** cobaltate. Reacting diethylene glycol glycidyl Me ether 42 with ethylene oxide 200 in n-hexane in the presence of Bu3Sn chloride and Bu3PO4 gave a polyether which was mixed with **Li** perchlorate (I) dissolved in propylene carbonate to a I/ethylene oxide molar ratio of 0.05 and cast in a PTFE mold at 100.degree. and 20 kg/cm2 for 10 min to give a film with cond. 1.1x10-2 S/cm at 20.degree..

IT **203863-86-9P**, Allyl glycidyl ether-diethylene glycol glycidyl allyl ether-ethylene oxide graft copolymer
RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(solid electrolyte compns. for secondary battery)

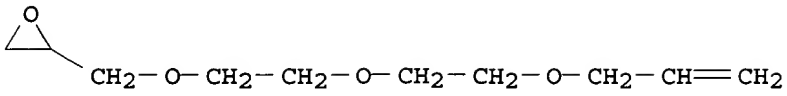
RN 203863-86-9 CAPLUS

CN Oxirane, [[2-[2-(2-propenyloxy)ethoxy]ethoxy]methyl]-, polymer with oxirane and [(2-propenyloxy)methyl]oxirane, graft (9CI) (CA INDEX NAME)

CM 1

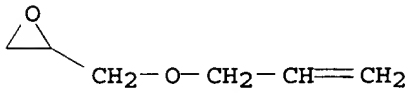
CRN 198642-83-0

CMF C10 H18 O4



CM 2

CRN 106-92-3
CMF C6 H10 O2



CM 3

CRN 75-21-8
CMF C2 H4 O

IC ICM C08G065-22
ICS C08G065-08; C08G077-46; C08G059-22; C08F299-02; C08L071-02; C08L083-12; C08L063-00; C08K003-24; C08K005-42; H01M006-18; H01M010-40; H01G009-025

CC 38-3 (Plastics Fabrication and Uses)
Section cross-reference(s): 72

ST polyoxyethylene branched polymer solid electrolyte; ethylene oxide copolymer solid electrolyte; **lithium** perchlorate electrolyte polyoxyethylene blend; secondary battery electrolyte polyoxyethylene compn

IT Solvents
(aprotic; solid electrolyte compns. contg. branched polyoxyethylene polymers for secondary battery)

IT Electrolytes
(compns. contg. branched polyoxyethylene polymers for)

IT Secondary batteries
(solid electrolyte compns. contg. branched polyoxyethylene polymers for)

IT Plasticizers
(solid electrolyte compns. contg. branched polyoxyethylene polymers for secondary battery)

IT Polyoxyalkylenes, uses

RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(solid electrolyte compns. contg. branched polyoxyethylene polymers for secondary battery)

IT 107-21-1D, Ethylene glycol, compds. with glyceryl ethers
RL: MOA (Modifier or additive use); USES (Uses)
(additives; in solid electrolyte compns. contg. branched polyoxyethylene polymers for secondary battery)

IT 56-81-5D, Glycerol, ethers, compds. with pentaerythritol
RL: MOA (Modifier or additive use); USES (Uses)
(additives; solid electrolyte compns. contg. branched polyoxyethylene polymers for secondary battery)

IT 75-05-8, Acetonitrile, uses 96-48-0, .gamma.-Butyrolactone 108-32-7, Propylene carbonate 109-99-9, THF, uses 112-49-2, Triethylene glycol dimethyl ether 143-24-8, Tetraethylene glycol dimethyl ether 4353-28-0, Tetraethylene glycol diethyl ether 4437-85-8, Butylene carbonate 4499-99-4, Triethylene glycol diethyl ether 19836-78-3
RL: NUU (Other use, unclassified); USES (Uses)
(aprotic solvent; in solid electrolyte compns. contg. branched polyoxyethylene polymers for secondary battery)

IT 7791-03-9, **Lithium** perchlorate 90076-65-6, **Lithium** bistrifluoromethane sulfonyl imide
RL: TEM (Technical or engineered material use); USES (Uses)
(electrolyte; in solid electrolyte compns. contg. branched polyoxyethylene polymers for secondary battery)

IT 91848-80-5
RL: MOA (Modifier or additive use); USES (Uses)
(in solid electrolyte compns. contg. branched polyoxyethylene polymers for secondary battery)

IT 25721-76-0, Polyethylene glycol dimethacrylate 26570-48-9, Polyethylene glycol diacrylate 27252-83-1, Polyethylene glycol diacetate
RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(in solid electrolyte compns. contg. branched polyoxyethylene polymers for secondary battery)

IT 9004-74-4D, Polyethylene glycol monomethyl ether, octylaluminum derivs. 24991-55-7, Polyethylene glycol dimethyl ether 27274-31-3D, Polyethylene glycol monoallyl ether, octylaluminum derivs. 27879-07-8D, Polyethylene glycol monoethyl ether, octylaluminum derivs. 31494-81-2, Polyethylene glycol monomethyl ether sodium salt 53609-62-4, Polyethylene glycol diethyl ether 59788-01-1, Polyethylene glycol diallyl ether 60436-25-1 113151-63-6 153815-02-2
RL: MOA (Modifier or additive use); USES (Uses)
(plasticizers; in solid electrolyte compns. contg. branched polyoxyethylene polymers for secondary battery)

IT 203863-94-9
RL: MOA (Modifier or additive use); USES (Uses)
(plasticizers; n solid electrolyte compns. contg. branched polyoxyethylene polymers for secondary battery)

IT 203863-85-8P, Diethylene glycol allyl glycidyl ether-ethylene oxide graft copolymer **203863-86-9P**, Allyl glycidyl ether-diethylene glycol glycidyl allyl ether-ethylene oxide graft copolymer 203863-87-0P,

Ethylene oxide-glycidyl methacrylate-tetraethylene glycol glycidyl allyl ether graft copolymer 203863-88-1P, Ethylene oxide-.gamma.-glycidoxypropyltrimethoxysilane-polyethylene glycol glycidyl methyl ether graft copolymer 203863-89-2P, Diethylene glycol glycidyl cyclohexyl ether-ethylene oxide-.gamma.-glycidoxypropylmethyldimethoxysilane copolymer 203863-90-5P, Ethylene oxide-2,3-epoxypropyl 2',3'-epoxy-2'-methylpropyl ether-triethylene glycol glycidyl methyl ether graft copolymer 203863-92-7P, Diethylene glycol 2,3-epoxypropyl 2',3'-epoxy-2'-methylpropyl ether-diethylene glycol glycidyl propyl ether-ethylene oxide graft copolymer 203863-93-8P, Ethylene oxide-triethylene glycol glycidyl methyl ether graft copolymer 203944-15-4P, Diethylene glycol glycidyl methyl ether-ethylene oxide graft copolymer
RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(solid electrolyte compns. for secondary battery)
REFERENCE COUNT: 13 THERE ARE 13 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L48 ANSWER 28 OF 34 CAPLUS COPYRIGHT 2003 ACS
ACCESSION NUMBER: 1996:214839 CAPLUS
DOCUMENT NUMBER: 124:262057
TITLE: Ion-conductive polymers for use as electrolytes in chargeable batteries or as binders for composite electrodes
INVENTOR(S): Benrabah, Djamila; Armand, Michel; Delabouglise, Didier
PATENT ASSIGNEE(S): Centre National de la Recherche Scientifique, Fr.; Hydro-Quebec, Montreal, Can.
SOURCE: Ger. Offen., 7 pp.
CODEN: GWXXBX
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 19527362	A1	19960201	DE 1995-19527362	19950726
FR 2723098	A1	19960202	FR 1994-9347	19940728
FR 2723098	B1	19961004		
CA 2154744	AA	19960129	CA 1995-2154744	19950726
JP 08081553	A2	19960326	JP 1995-193516	19950728
US 5696224	A	19971209	US 1995-508529	19950728

PRIORITY APPLN. INFO.: FR 1994-9347 19940728

AB The title polymers, which can be linear, branched, or of comb configuration, bear ionic groups prepd. by reaction of allyl, glycidyl, vinylbenzyl, (meth)acryloyl, or H groups on polymers of specified structure with compds. bearing geminal fluoroalkanesulfonyl groups. Heating 4 g 5:95 allyl glycidyl ether-ethylene oxide copolymer (mol. wt. 230,000) with 530 g Li[CH2:CHCH2C(SO2CF3)2] in MeCN contg. 70 mg Bz2O2 gave a polymer soln. which was cast on a polypropylene film and

dried at 80.degree.. The use of such a film in a chargeable battery is exemplified.

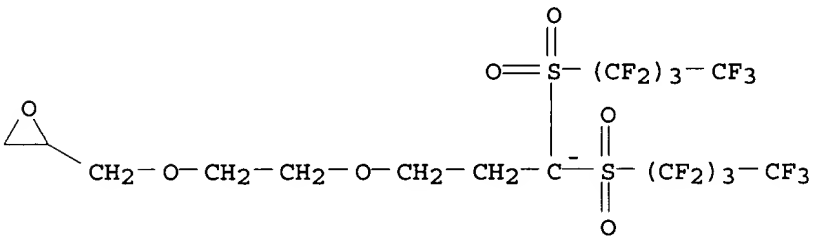
IT **175220-33-4P 175220-35-6P**
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(ion-conductive polymers for use as electrolytes in chargeable batteries or as binders for composite electrodes)

RN 175220-33-4 CAPLUS

CN Oxirane, [[2-[3,3-bis[(nonafluorobutyl)sulfonyl]propoxy]ethoxy]methyl]-, ion(1-), lithium, polymer with methyloxirane and [(2-propenyloxy)methyl]oxirane (9CI) (CA INDEX NAME)

CM 1

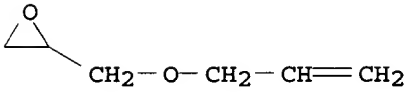
CRN 175220-32-3
CMF C16 H13 F18 O7 S2 . Li



● Li+

CM 2

CRN 106-92-3
CMF C6 H10 O2



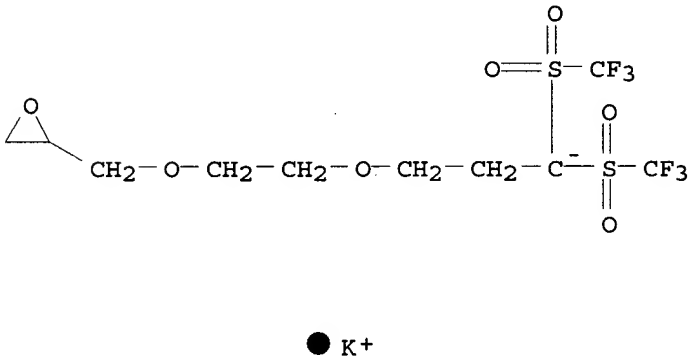
CM 3

CRN 75-21-8
CMF C2 H4 O

RN 175220-35-6 CAPLUS
CN Oxirane, [[2-[3,3-bis[(trifluoromethyl)sulfonyl]propoxy]ethoxy]methyl]-, ion(1-), potassium, polymer with methyloxirane, oxirane and [(2-propenyloxy)methyl]oxirane (9CI) (CA INDEX NAME)

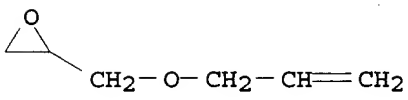
CM 1

CRN 175220-34-5
CMF C10 H13 F6 O7 S2 . K



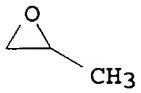
CM 2

CRN 106-92-3
CMF C6 H10 O2



CM 3

CRN 75-56-9
CMF C3 H6 O



CM 4

CRN 75-21-8
CMF C2 H4 O

IC ICM C08G085-00
ICS C08G081-00; C08G065-22; C08G065-32; C08G065-34; C08G065-48; H01M010-40; H01M004-40
ICA G02F001-15
CC 35-8 (Chemistry of Synthetic High Polymers)
ST ion conductive polymer prepn; battery electrolyte polymer conductive; electrode composite polymer conductive; trifluoromethylsulfonylbutene salt polymer conductive; allyl glycidyl ether copolymer conductive; ethylene oxide copolymer conductive
IT Electrochromic materials
(ion-conductive polymers)
IT Batteries, secondary
Electric conductors, polymeric
Electrodes
(ion-conductive polymers for use as electrolytes in chargeable batteries or as binders for composite electrodes)
IT Polyoxyalkylenes, preparation
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(reaction products, with trifluoromethylsulfone deriv. salts; ion-conductive polymers for use as electrolytes in chargeable batteries or as binders for composite electrodes)
IT 1871-57-4DP, reaction products with polyoxyethylene triol and bis[(trifluoromethyl)sulfonyl]butanol K salt 26282-59-7DP, Allyl glycidyl ether-ethylene oxide copolymer, reaction products with bis[(trifluoromethyl)sulfonyl]butene **Li** salt 31694-55-0DP, reaction products with bis[(trifluoromethyl)sulfonyl]butanol K salt and chloro(chloromethyl)propene 32171-39-4DP, Polyethylene glycol methyl ether acrylate, reaction products with bis[(trifluoromethyl)sulfonyl]propyl acrylate **Li** salt **175220-33-4P 175220-35-6P**
175220-36-7DP, reaction products with allyl glycidyl ether-ethylene oxide copolymer 175220-37-8DP, reaction products with polyoxyethylene triol and chloro(chloromethyl)propene 175220-38-9DP, reaction products with polyethylene glycol Me ether acrylate
RL: IMF (Industrial manufacture); TEM (Technical or engineered material

use); PREP (Preparation); USES (Uses)
(ion-conductive polymers for use as electrolytes in chargeable batteries or as binders for composite electrodes)

L48 ANSWER 29 OF 34 CAPLUS COPYRIGHT 2003 ACS
ACCESSION NUMBER: 1995:248369 CAPLUS
DOCUMENT NUMBER: 122:42341
TITLE: Solid state electrochromic devices
INVENTOR(S): Cheshire, Philip
PATENT ASSIGNEE(S): Imperial Chemical Industries PLC, UK
SOURCE: Pat. Specif. (Aust.), 80 pp.
CODEN: ALXXAP
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
AU 648526	B2	19940428	AU 1990-68428	19901221
AU 9068428	A1	19920716		

PRIORITY APPLN. INFO.: AU 1990-68428 19901221

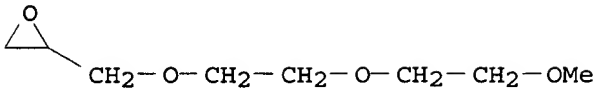
AB Laminated thin-layer electrochromic devices which comprise a first conductive electrode and a second conductive electrode sepd. by a solid electrolyte and an electrochromic material capable of reversible electrochromic interaction with activating electrons and/or ions furnished to it by, or by it to, the rest of the device under the influence of an elec. potential applied across the electrodes, are described which employ a solid electrolyte comprising (a) a matrix of optionally cross-linked main polymer chains, which are hydrocarbons or polyethers, having side chains linked to the main polymer chains, which side chains comprise polar groups, (b) an optional polar aprotic liq. dispersed in the matrix, and (c) an ionized ammonium or alkali metal salt dissolved in the matrix and/or liq. The electrolyte may be formed in situ, is readily conformable to any desired shape, and has good tensile properties (is structurally robust).

IT **115383-11-4P**
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); PROC (Process); USES (Uses)
(crosslinked; solid-state electrochromic devices using polymer-based electrolytes which can be cast in situ)

RN 115383-11-4 CAPLUS
CN Oxirane, [[2-(2-methoxyethoxy)ethoxy]methyl]-, polymer with oxirane and [(2-propenyloxy)methyl]oxirane (9CI) (CA INDEX NAME)

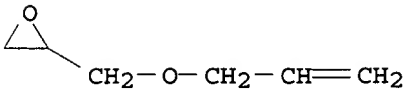
CM 1

CRN 71712-93-1
CMF C8 H16 O4



CM 2

CRN 106-92-3
CMF C6 H10 O2



CM 3

CRN 75-21-8
CMF C2 H4 O

IC ICM G02F001-15
CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): 74, 76
ST electrochromic device solid polymer electrolyte
IT Polyethers, uses
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(crosslinked; solid-state electrochromic devices using polymer-based electrolytes which can be cast in situ)
IT Electrolytes
(polymer-based; solid-state electrochromic devices using polymer-based electrolytes which can be cast in situ)
IT Optical imaging devices
(electrochromic, solid-state electrochromic devices using polymer-based electrolytes which can be cast in situ)
IT 26282-59-7P, Allyl glycidyl ether-ethylene oxide copolymer 85273-30-9P 101027-43-4P **115383-11-4P**
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); PROC (Process); USES (Uses)
(crosslinked; solid-state electrochromic devices using polymer-based electrolytes which can be cast in situ)

IT 94-36-0, Benzoyl peroxide, uses 108-32-7, Propylene carbonate
33454-82-9, **Lithium** triflate
RL: DEV (Device component use); MOA (Modifier or additive use); PEP (Physical, engineering or chemical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(solid-state electrochromic devices using polymer-based electrolytes which can be cast in situ)

IT 159655-87-5P
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); RCT (Reactant); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); PROC (Process); RACT (Reactant or reagent); USES (Uses)
(solid-state electrochromic devices using polymer-based electrolytes which can be cast in situ)

L48 ANSWER 30 OF 34 CAPLUS COPYRIGHT 2003 ACS
ACCESSION NUMBER: 1992:459053 CAPLUS
DOCUMENT NUMBER: 117:59053
TITLE: Solid-state electrochromic devices
INVENTOR(S): Cheshire, Philip
PATENT ASSIGNEE(S): Imperial Chemical Industries PLC, UK
SOURCE: Eur. Pat. Appl., 31 pp.
CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 434359	A2	19910626	EP 1990-313835	19901218
EP 434359	A3	19920408		
EP 434359	B1	19970423		
R: AT, BE, CH, DE, ES, FR, GB, IT, LI, NL, SE				
AT 152253	E	19970515	AT 1990-313835	19901218
ES 2100876	T3	19970701	ES 1990-313835	19901218
US 5206756	A	19930427	US 1990-630996	19901219
CA 2032865	AA	19910621	CA 1990-2032865	19901220
ZA 9010299	A	19920429	ZA 1990-10299	19901220
JP 04211227	A2	19920803	JP 1990-419268	19901220

PRIORITY APPLN. INFO.: GB 1989-28748 19891220

AB Electrochromic devices which comprise a solid electrolyte and an electrochromic material sandwiched between electrodes are described which employ a solid electrolyte comprising a matrix of (optionally crosslinked) main polymer chains with polar group-contg. side groups, optionally a polar aprotic liq. dispersed in the matrix, and an ionized ammonium or alkali metal salt dissolved in the matrix and/or liq. A process for prepg. the devices, entailing coating a supports with the electrochromic material and the solid electrolyte (or its precursor), coating a 2nd support with an activating ion source, and hot-pressing the supports together, is also described.

IT **115383-11-4P**

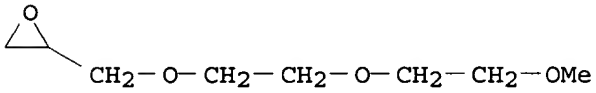
RL: PREP (Preparation)
(prepn. and use of crosslinked, in solid electrolytes for electrochromic devices)

RN 115383-11-4 CAPLUS

CN Oxirane, [[2-(2-methoxyethoxy)ethoxy]methyl]-, polymer with oxirane and [(2-propenyloxy)methyl]oxirane (9CI) (CA INDEX NAME)

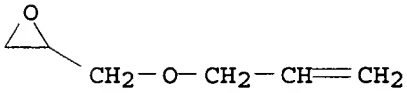
CM 1

CRN 71712-93-1
CMF C8 H16 O4



CM 2

CRN 106-92-3
CMF C6 H10 O2



CM 3

CRN 75-21-8
CMF C2 H4 O

IC ICM G02F001-15

CC 74-13 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 76

ST electrochromic device solid electrolyte polymer

IT Optical imaging devices
(electrochromic, solid electrolytes for)

IT Electrolytes
(solid, for electrochromic devices)

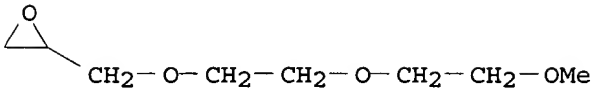
IT 126-33-0, Sulpholane 872-50-4, N-Methylpyrrolidone, uses 33454-82-9, **Lithium** triflate 43095-05-2

RL: USES (Uses)
(electrochromic device solid electrolytes contg.)
IT 9063-06-3P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(prepn. and reaction of, in electrochromic devices solid electrolyte prepn.)
IT 26282-59-7P, Allyl glycidyl ether-ethylene oxide copolymer
115383-11-4P
RL: PREP (Preparation)
(prepn. and use of crosslinked, in solid electrolytes for electrochromic devices)
IT 52108-83-5P 64422-56-6P
RL: SPN (Synthetic preparation); PREP (Preparation)
(prepn. and use of, in solid electrolytes for electrochromic devices)

L48 ANSWER 31 OF 34 CAPLUS COPYRIGHT 2003 ACS
ACCESSION NUMBER: 1990:99682 CAPLUS
DOCUMENT NUMBER: 112:99682
TITLE: Ionic conductivity in organic solids derived from amorphous macromolecules
AUTHOR(S): Ballard, D. G. H.; Cheshire, P.; Mann, T. S.; Przeworski, J. E.
CORPORATE SOURCE: ICI Chem. Polym., Runcorn/Cheshire, WA7 4QF, UK
SOURCE: Macromolecules (1990), 23(5), 1256-64
CODEN: MAMOBX; ISSN: 0024-9297
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Completely amorphous polymers of ethylene oxide were prepd. using principles derived from a study of the effect of copolymn. on crystallinity and lamellae thickness in semicryst. systems. The ionic cond. of these polymers is significantly improved in the presence of **Li** triflate, provided that the comonomer used has the same C:O ratio as poly(ethylene oxide) (I). The optimum cond. achieved at 25.degree. was .apprx.2 .times. 10-5 S.cm-1, compared to 5 .times. 10-8 S.cm-1 for semicryst. I. The mech. properties were poor, however. Amorphous terpolymers were prepd. with the same compn. but contg. 5% of crosslinkable sites. The effect of crosslinking was to reduce the cond. by an order of magnitude, but mech. properties were improved. Studies of a model system, dimethoxyethane with propylene carbonate, showed that conductivities on the order of 10-2 S.cm-1 were possible in org. media with **Li** triflate. Extension of this concept to the amorphous crosslinked I systems showed that the addn. of 33% propylene carbonate gave a flexible film with good mech. properties and a cond. of 10-3 S.cm-1.
IT **115383-11-4P**
RL: SPN (Synthetic preparation); PREP (Preparation)
(prepn. and mech. properties and elec. cond. of **lithium** triflate-doped)
RN 115383-11-4 CAPLUS
CN Oxirane, [[2-(2-methoxyethoxy)ethoxy]methyl]-, polymer with oxirane and [(2-propenyloxy)methyl]oxirane (9CI) (CA INDEX NAME)

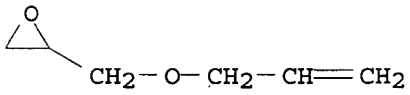
CM 1

CRN 71712-93-1
CMF C8 H16 O4



CM 2

CRN 106-92-3
CMF C6 H10 O2



CM 3

CRN 75-21-8
CMF C2 H4 O

CC 36-5 (Physical Properties of Synthetic High Polymers)
ST ethylene oxide copolymer elec cond; crosslinking effect polyoxyethylene elec cond; **lithium** triflate doped oxirane copolymer
IT Polyoxyalkylenes, preparation
RL: SPN (Synthetic preparation); PREP (Preparation)
(amorphous, prepn. and mech. properties and elec. cond. of **lithium** triflate-doped)
IT Electric conductivity and conduction
(of amorphous ethylene oxide copolymers doped with **lithium** triflate)
IT Crosslinking
Glass temperature and transition
(of amorphous ethylene oxide copolymers, mech. properties and elec. cond. in relation to)
IT Polyoxyalkylenes, preparation
RL: SPN (Synthetic preparation); PREP (Preparation)
(Me hydrogen siloxane-, prepn. and ionic cond. of)

IT Siloxanes and Silicones, preparation
RL: SPN (Synthetic preparation); PREP (Preparation)
(Me hydrogen, polyoxyalkylene-, prepn. and ionic cond. of)
IT 872-50-4, N-Methylpyrrolidone, properties
RL: PRP (Properties)
(ionic cond. of amorphous ethylene oxide copolymer films contg.)
IT 108-32-7, Propylene carbonate
RL: PRP (Properties)
(ionic cond. of dimethoxyethane solns. or amorphous ethylene oxide copolymer films contg.)
IT 110-71-4, Dimethoxyethane
RL: PRP (Properties)
(ionic cond. of propylene carbonate solns. contg.)
IT 33454-82-9, **Lithium** triflate
RL: PRP (Properties)
(ionic conductivities of oxirane copolymers doped with)
IT 27252-80-8DP, polymers with trimethylsilyl-terminated H Me siloxanes
124604-90-6DP, reaction products with methacrylic anhydride
RL: PREP (Preparation)
(prepn. and crosslinking and ionic cond. of)
IT 124618-72-0P
RL: SPN (Synthetic preparation); PREP (Preparation)
(prepn. and ionic cond. and mech. properties of)
IT 64786-16-9P 88752-55-0P, Butyl glycidyl ether-oxirane copolymer
115383-11-4P 115401-75-7P 124604-86-0P 124604-87-1P
124604-88-2P 124604-89-3P 124618-70-8P
RL: SPN (Synthetic preparation); PREP (Preparation)
(prepn. and mech. properties and elec. cond. of **lithium** triflate-doped)
IT 124604-90-6P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(prepn. and reaction of, with methacrylic anhydride)
IT 760-93-0, Methacrylic anhydride
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with di-Bu carbonate-diethylene glycol copolymer)

L48 ANSWER 32 OF 34 CAPLUS COPYRIGHT 2003 ACS
ACCESSION NUMBER: 1990:39784 CAPLUS
DOCUMENT NUMBER: 112:39784
TITLE: Solid electrolytes
INVENTOR(S): Ballard, Denis George Harold; Cheshire, Philip; Przeworski, Josef Emilio
PATENT ASSIGNEE(S): Imperial Chemical Industries PLC, UK
SOURCE: Eur. Pat. Appl., 17 pp.
CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE

EP 332771	A1	19890920	EP 1988-302250	19880315
R: AT, BE, CH, DE, ES, FR, GB, IT, LI, NL, SE				
AU 606661	B2	19910214	AU 1988-13155	19880316
AU 8813155	A1	19900215		
CA 1308165	A1	19920929	CA 1988-561936	19880318

PRIORITY APPLN. INFO.: EP 1988-302250 19880315

AB Solid electrolytes for a battery comprise a matrix of crosslinked polymer, a polar aprotic liq. dispersed in the matrix, and an ionized NH4+, alkali metal, or alk. earth salt dissolved in the matrix and/or liq. The polymer has main chains, which are linked to side chains having polar groups free of active H atoms. The aprotic liq. has a dielec. const. of .gtoreq.50 and/or a dipole moment of .gtoreq.3 D, e.g., ethylene or propylene carbonate, dialkylformamide or dialkylsulfoxide, cyclic ether, sulfonane, etc. The electrolytes are prepd. by forming the matrix, incorporating the highly ionized salt in the matrix or its precursor, and by introducing the aprotic liq. into the matrix and its precursor. A battery cathode comprises a solid dispersion of a potential oxidant and a highly conductive material, i.e., 30-60% MnO2 and 2-10% carbon black or a transition metal as particles of <40 .mu.m, in a matrix of the solid electrolyte. A battery includes a conductive anode and the described cathode and solid electrolyte. Several polymers were made and elec. conductivities of these polymers contg. LiF3CSO3 and various aprotic polar liqs. were detd.

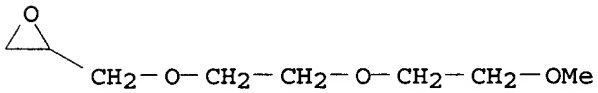
IT **115383-11-4D**, **lithium** complexes
RL: USES (Uses)
(aprotic polar liq.-contg., for cathodes and electrolytes of **lithium** batteries)

RN 115383-11-4 CAPLUS

CN Oxirane, [[2-(2-methoxyethoxy)ethoxy]methyl]-, polymer with oxirane and [(2-propenyloxy)methyl]oxirane (9CI) (CA INDEX NAME)

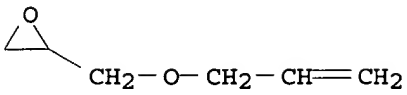
CM 1

CRN 71712-93-1
CMF C8 H16 O4



CM 2

CRN 106-92-3
CMF C6 H10 O2



CM 3

CRN 75-21-8
CMF C2 H4 O

IC ICM H01M006-18
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 38, 76
ST **lithium** manganese dioxide polymer battery; battery solid electrolyte polymer; **lithium** trifluoromethanesulfonate polymer electrolyte battery; propylene carbonate polymer electrolyte battery; cathode battery **lithium** trifluoromethanesulfonate polymer; elec cond polymer **lithium** trifluoromethanesulfonate
IT Electric conductivity and conduction
(of polymers contg. **lithium** trifluoromethane sulfonate and aprotic polar liqs., for battery cathodes and electrolytes)
IT Cathodes
(battery, manganese dioxide, contg. polymers having **lithium** trifluoromethane sulfonate and aprotic polar liqs.)
IT Polycarbonates, compounds
RL: USES (Uses)
(methacrylates, polymers aprotic polar liq.- and salt-contg., for cathodes and electrolytes of **lithium** batteries)
IT Siloxanes and Silicones, uses and miscellaneous
RL: USES (Uses)
(polyoxyalkylene-, graft, aprotic polar liq.- and salt-contg., for cathodes and electrolytes of **lithium** batteries)
IT Polyoxyalkylenes, uses and miscellaneous
RL: USES (Uses)
(siloxane-, graft, aprotic polar liq.- and salt-contg., for cathodes and electrolytes of **lithium** batteries)
IT Batteries, secondary
(solid-electrolyte, **lithium** trifluoromethanesulfonate- and polar aprotic liq.-contg. polymer)
IT 7439-93-2D, **Lithium**, complexes with polymers 66536-63-8D, **lithium** complexes 108927-94-2D, **lithium** complexes **115383-11-4D**, **lithium** complexes 115401-75-7D, **lithium** complexes 123547-25-1D, **lithium** complexes 124124-23-8D, **lithium** complexes
RL: USES (Uses)

(aprotic polar liq.-contg., for cathodes and electrolytes of **lithium** batteries)

IT 1313-13-9, Manganese dioxide, uses and miscellaneous 9033-83-4, Polyphenylene
RL: USES (Uses)
(cathodes contg. polymers having **lithium** trifluoromethane sulfonate and aprotic polar liqs.)

IT 33454-82-9, **Lithium** trifluoromethanesulfonate
RL: USES (Uses)
(polymers contg. aprotic liqs. and for cathodes and electrolytes for **lithium** batteries)

IT 75-12-7D, Formamide, dialkyl derivs. 96-49-1, 1,3-Dioxolan-2-one 108-32-7, Propylene carbonate 120-62-7D, Sulfoxide, dialkyl derivs. 126-33-0, Sulfolane 872-50-4, N-Methylpyrrolidone, uses and miscellaneous 123652-44-8
RL: USES (Uses)
(polymers contg. **lithium** trifluoromethane sulfonate and, for cathodes and electrolytes of **lithium** batteries)

L48 ANSWER 33 OF 34 CAPLUS COPYRIGHT 2003 ACS
ACCESSION NUMBER: 1989:598553 CAPLUS
DOCUMENT NUMBER: 111:198553
TITLE: Solid-electrolyte electrochemical devices
INVENTOR(S): Cheshire, Philip; Przeworski, Jozef Emilio
PATENT ASSIGNEE(S): Imperial Chemical Industries PLC, UK
SOURCE: Eur. Pat. Appl., 20 pp.
CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 331342	A2	19890906	EP 1989-301727	19890222
EP 331342	A3	19910626		
R: AT, BE, CH, DE, ES, FR, GB, IT, LI, NL, SE				
ZA 8901500	A	19891129	ZA 1989-1500	19890227
AU 8930809	A1	19890907	AU 1989-30809	19890228
AU 603730	B2	19901122		
CA 1314930	A1	19930323	CA 1989-592369	19890228
JP 01311573	A2	19891215	JP 1989-46688	19890301
US 5001023	A	19910319	US 1989-317557	19890301

PRIORITY APPLN. INFO.: GB 1988-4860 19880301

AB A solid-electrolyte battery in the form of a flexible multisheathed cable comprises an anode, a cathode, and a solid electrolyte of a polymer matrix, a polar aprotic liq. dispersed in the matrix, and an ionized NH4+, alkali metal, or alk. earth salt dissolved in the matrix and/or liq. The polymer has main chains, which are linked to side chains having polar groups free of active H atoms. The polymer main chains are crosslinked and essentially org., and the side chains comprise ester or ether linkages. The main chains are hydrocarbons or polyethers crosslinked by

C-C bonds or oxy functions between the main and/or side chains, or in other pendent group. The aprotic polar liq. is ethylene carbonate or propylene carbonate, a dialkylformamide or dialkylsulfoxide, a cyclic ether, sulfolane, etc. The cathode includes a dispersion of 30-60% MnO2 and 2-10% carbon black or transition metal as <40-.mu.m particles in the matrix of the invention solid electrolyte. Several polymers were made and elec. conductivities of these polymers contg. LiF3CSO3 and various aprotic polar liqs. were detd. Performances of **Li** batteries having invention solid electrolytes and invention cathodes are also reported.

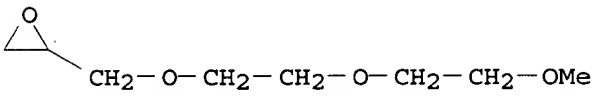
IT **115383-11-4D, lithium** complexes
RL: USES (Uses)
(electrolyte, aprotic polar liq.-contg., for **lithium** batteries)

RN 115383-11-4 CAPLUS

CN Oxirane, [[2-(2-methoxyethoxy)ethoxy]methyl]-, polymer with oxirane and [(2-propenyloxy)methyl]oxirane (9CI) (CA INDEX NAME)

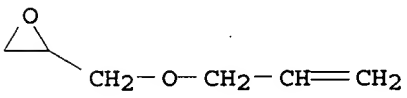
CM 1

CRN 71712-93-1
CMF C8 H16 O4



CM 2

CRN 106-92-3
CMF C6 H10 O2



CM 3

CRN 75-21-8
CMF C2 H4 O

IC ICM H01M006-18

KOROMA EIC1700

SOURCE: Eur. Pat. Appl., 17 pp.
CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 260847	A1	19880323	EP 1987-307797	19870903
R: AT, BE, CH, DE, ES, FR, GB, IT, LI, NL, SE				
ZA 8706715	A	19880427	ZA 1987-6715	19870908
AU 8778236	A1	19880324	AU 1987-78236	19870910
AU 586122	B2	19890629		
US 4822701	A	19890418	US 1987-95264	19870911
JP 63239779	A2	19881005	JP 1987-233756	19870919
CA 1287873	A1	19910820	CA 1987-547423	19870921
ZA 8801815	A	19890222	ZA 1988-1815	19880314
JP 01241764	A2	19890926	JP 1988-62086	19880317
PRIORITY APPLN. INFO.:			GB 1986-22576	19860919
			GB 1987-10310	19870430

AB The title electrolytes contain a matrix of sheets of atoms, having side chains linked to the sheets, and the side chains comprise polar groups free from active hydrogen atoms; a polar aprotic liq. dispersed in the matrix; and a highly ionized NH4+ or alkali metal salt dissolved in the matrix and/or liq. The electrolyte can be used to prep. composite cathodes for batteries. Thus, 1 g (4.6:17.5:77.9 mol. ratio) allyl glycidyl ether-diethylene glycol monomethyl monoglycidyl ether-ethylene oxide copolymer having a mol. wt. of 380,000 was dissolved in 25 mL MeCN under N, LiCF3SO3 was added to the soln. at a O (in the polymer): **Li** at. ratio of 16:1 followed by addn. of 1.0 wt.% dry benzozyl peroxide, the mixt. was cast, the solvent was evapd. in N, and the residue was heated at 110.degree. to form a 200-.mu.m crosslinked film having a cond. of 3.5 .times. 10-6/.OMEGA.-cm at 20.degree.. This film was exposed to propylene carbonate vapor to a 50% wt. increase to obtain an electrolyte film which was easy to handle and adequately dimensionally stable. A cathode was prepd. similarly by using a 50:50 mixt. of the copolymer and a MnO2-10% carbon black mix. A **Li** battery using this electrolyte and this cathode had an open-circuit voltage of 3.2 V and was capable of discharge at a steady c.d. of 120-.mu.A/cm2 at .apprx.20.degree.. Electrolytes of the invention can also be used for capacitors.

IT **115383-11-4D, lithium** complexes
RL: USES (Uses)
(electrolytes, for batteries and capacitors)

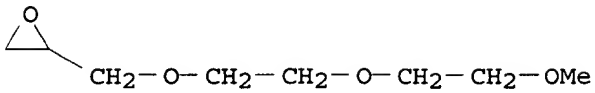
RN 115383-11-4 CAPLUS

CN Oxirane, [[2-(2-methoxyethoxy)ethoxy]methyl]-, polymer with oxirane and [(2-propenyloxy)methyl]oxirane (9CI) (CA INDEX NAME)

CM 1

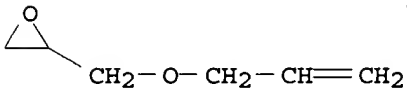
CRN 71712-93-1

CMF C8 H16 O4



CM 2

CRN 106-92-3
CMF C6 H10 O2



CM 3

CRN 75-21-8
CMF C2 H4 O

IC ICM H01M006-18
ICS H01M010-40; H01M004-50
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 38, 72
ST battery **lithium** solid electrolyte; **lithium** trifluoromethanesulfonate polymer solid electrolyte; polyether unsatd crosslinked solid electrolyte; capacitor solid electrolyte
IT Siloxanes and Silicones, compounds
RL: USES (Uses)
(Me hydrogen, copolymers with PEG allyl Me ether, **lithium** complexes, electrolytes, for batteries and capacitors)
IT Cathodes
(battery, **lithium** complexes-polymer)
IT 1313-13-9, Manganese dioxide, uses and miscellaneous 9033-83-4, Polyphenylene
RL: USES (Uses)
(cathodes, contg. solid electrolytes, for batteries)
IT 7439-93-2D, **Lithium**, polymer complexes 27274-31-3D, copolymers with Me hydrogen siloxanes, **lithium** complexes
115383-11-4D, **lithium** complexes 115401-75-7D, **lithium** complexes 115402-20-5D, **lithium** complexes

115402-21-6D, **lithium** complexes 115402-24-9D, **lithium** complexes
RL: USES (Uses)
(electrolytes, for batteries and capacitors)

US 0985583806P1

Creation date: 01-15-2004
Indexing Officer: HSIAD - HUSSEIM SIAD
Team: OIPEBackFileIndexing
Dossier: 09855838

Legal Date: 08-01-2003

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1	A...	2
2	CLM	7
3	REM	3

Total number of pages: 12

Remarks:

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